

September 1998  
Volume 69  
No. 9  
\$5.00

New Monthly Feature:  
**FREE CODE CARDS!**  
see inside.

# The National Locksmith®



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Comptronic  
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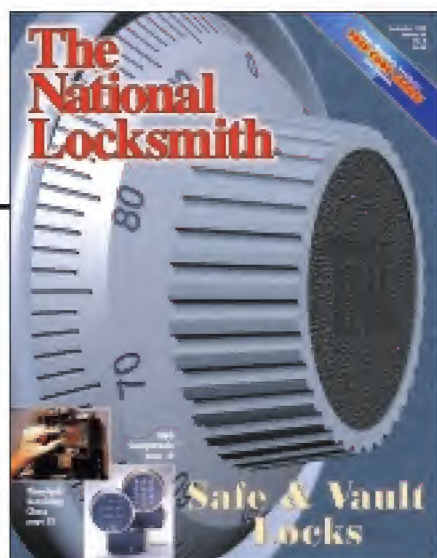
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Servicing  
Class  
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## Safe & Vault Locks



**On The Cover...**



Electronic safe locks by S&G, LaGard and Mas Hamilton are rapidly infringing where mechanical locks once reigned.

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you wish to read**



# COMMENTARY



<http://www.TheNationalLocksmith.com>  
User name: national User ID: G5fh84

## Lots of news from the home office...

As those of you who are on my E Mail list already know, I am in love with the Internet. A recent development is that many local cable companies now offer Internet access for a reasonable fee that gives you incredible speed. I mean it is totally amazing. Check with your cable TV company. And see the note below this column to join our E Mail list.

There is some good news for those of you who work on cars. The 1998-1999 AutoSmart™ and update are now out, and we should be shipping by the time you read this. Also, we've introduced a new companion volume called the MiniSmart™. The Mini contains much of the useful information in the AutoSmart™, but it is distilled down to a convenient format with a small size. It doesn't replace the AutoSmart™, but it's a handy addition to your library.

Take a look at the ad on page 55 for further information. But be aware that we have a very special price on the MiniSmart™ only when you order it at exactly the same time as your AutoSmart™ or your update.

So now is the time to order your AutoSmart™ (or update) as well as the new MiniSmart™!

At the last ALOA convention the membership voted to change the association's bylaws in order to permit voting by mail. That means that now ALL ALOA members will be able to vote in each election. Previously, you could only vote if you attended the annual convention.

I believe this is an excellent step. And if you're not a member, perhaps now is the time to consider joining. No one likes to be part of an organization if they believe they have no voice. Now you have the ability to mail in your vote, so make it count!

*Marc Goldberg*

Next month stay tuned for a new line of code books to be introduced by *The National Locksmith*. Called INSTA CODE Books, we'll be starting with Motorcycles and foreign cars. Each vehicle will be sold as a separate volume, allowing you to purchase only the codes you want. More good news is that each volume will contain all the 1200CM™ code cards needed for each series in that book. If you own a computer, INSTA CODE software allows you to make your own code books and cards. But if you prefer paper over software, we still have a solution for you. Watch for advertising in next month's magazine.

The December issue will be our Buyers Guide. If you represent a company or association in the industry, take a moment and see if you were listed in last year's guide. If you were, by now you should have received and returned a questionnaire in order to be listed in this year's edition.

However, if you were not listed in last year's issue, please call us immediately to arrange your inclusion in the newest Buyers Guide.



### Join our free E-mail list!

Receive locksmith info by E-Mail  
Write us at: NATLOCK@aol.com

**Marc Goldberg**  
Publisher

September 1998 • 5



# Mango's Message



**D**on't you hate it when you have those momentary brain lapses causing you to lose an infinitesimal amount of time and sense of all reality. You know, one of those moments when you walk into the other room looking for something and then forget what you were looking for. So you walk back to where you came from hoping that it will jar your memory. Or you pick up the phone to call someone only to forget who you intended to call. You then flip through your phone book hoping that a name will ring a bell. Or you start to say something and then forget what you were going to say until about 10 minutes later.

## Big Mistake

This isn't something I would normally readily admit, but on occasion, my brain does lack a flow of oxygen and I do experience a minor time warp. Unlike most who only experience momentary lapses, however, mine can last for, oh, 40-45 minutes or so.

The cause of these sporadic mental incapacitations has not yet been confirmed, however, after extensive examination and observation a preliminary diagnosis has been theorized. According to Mr. Spock, from the Star Ship Enterprise Observatory for the Advanced Development of Android Consciousness and Emotion, due to an underdeveloped, infantile like cerebral cortex, sensory overloads will be experienced, resulting in temporary stupefaction. Boy, what a relief. I was really concerned that it may have been something serious.

Lucky for me, these brain wave black holes don't occur too very often, but when they do, they're mammoth. But then, I have always been one who believes if you're going to do something, do it big.

Recently, I suffered a mental paralysis that was quite crippling, resulting in a terrible mistake. My long term prognosis is good and doctors say that I should not experience any severe side effects, however, I am still in the recovery stages and only time will tell. (I just might have to take an extended vacation in Rio de Janeiro to recoup.)

One of the shortcomings of being human is that no matter how hard you try, absolute perfection will never be achieved. The goal for all of us is to strive for perfection in our personal and professional lives, however it is seldom ever realized. As a result, we have come to accept human errors. We may not like them, and we may gripe and groan about the idiosyncratic human behavior of making mistakes (especially when someone else makes the mistake) but we

know they will occur.

That being said, I made a big one in the July issue of *The National Locksmith*. I'd like to tell you that this is the first time in my life that I have made a mistake of this magnitude, but it's not. I'd also like to tell you that it's the last time I will ever make such a mistake, but it won't be. I don't like it one bit when it happens, but I know that no matter how hard I try to walk without ever tripping, I will on occasion stumble and fall. And like any caring, sensible individual, I tried like the dickens to blame this mistake on someone else. It didn't work.

**I** was in the office doing my usual exhausting mind bending work like scanning my e-mail, reading the paper to see what was playing at the theater that weekend, checking the stock market prices, and other important executive type stuff. It's no wonder I'm exhausted at the end of the day, it's grueling work. (Trust me, don't let your kids grow up to be an editor.)

A subscriber to the magazine calls and says: "Hey Greg, there's a glaring mistake on page 67 in the magazine. I have worked with these locks and the information is wrong!"

"Oh great!" I think silently to myself. This is going to be a good day.

**Continued on  
page 8.**

*Greg Mango*

**Greg Mango  
Editor**





# Mango's Message

**Continued from page 6**

In July, we did an article on the Ilco 683 combination lock. It was written by Charles Stephenson, Product Manager for Electronic Safe Locks with the Ilco Unican Corp. I grabbed a magazine and flipped to page 67 and the lock photograph smacked me right between the eyes. Sure enough, it was wrong.

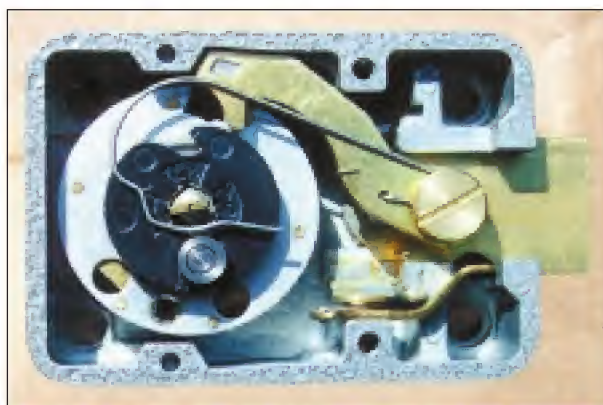
I conceded to the caller that his claim was indeed correct, as he proceeded to berate me for not checking our facts before we publish information. Like I didn't feel bad enough already.

Always willing to pass the buck whenever possible, I pulled the original manuscript to see if the mistake occurred in the material provided by Mr. Stephenson, if production inadvertently switched photographs, or if on a slim, extremely minute and unlikely chance, I caused the error. I highly doubt it though.

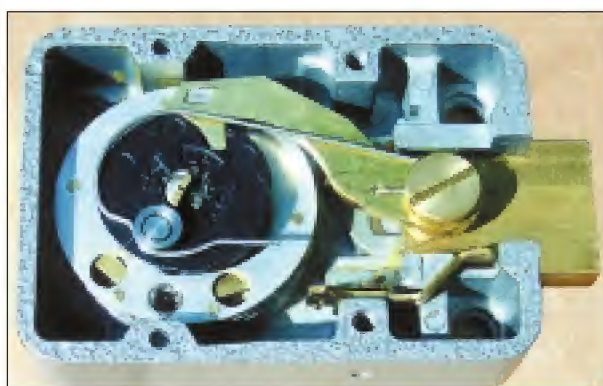
After close examination and process of elimination, the finger was pointing in my direction. I hate it when that happens.

In the article, *photograph 2*, which you see here is incorrect. This is actually *photograph 3*. And *photograph 3*, seen here should be *photograph 2*. While numbering the photograph sequence for the article, I must have blown a fuse and suffered a short circuit, switching these two photographs and creating the dilemma.

The correction for this mistake is critical because the purpose of the two photographs is to show the correct positioning of the spline key and override spring. Failure to properly position this spring will result in the malfunction and operational failure of the lock, causing a lockout. And who would you be calling expletives and have to blame for the lockout? Well, I think we all know the answer to that.



**The correct photograph 3.**



**The correct photograph 2.**

The drive cam roller bearing should be on the inside of the override spring, not on the outside of it. You may want to make a note of this in your July issue by switching the number 2 and 3 photograph designation for future reference.

The Achilles' heel for any publishing company is incorrect information and mistakes. Nobody benefits when such misfortunes occur. It doesn't make us feel good and most importantly, it doesn't make us look good. What makes it particularly difficult for us when a correction needs to be made is the earliest I can inform you is two months later. That's due to the nature of the publishing business and the time scheduling necessary to produce a magazine.

**T**here are precautionary measures implemented to reduce misinformation and mistakes, however, no matter how hard we try or how many people review and proof the editorial content before you receive it, things still manage to slip between the cracks. Nobody wants this magazine to be more perfect than us, yet with every issue we learn of things that we can do better, and we diligently try to. We don't always succeed, but our intentions are good.

To compensate you for my obvious oversight and apologize for any misfortune or trouble this may have caused, I am going to throw you a big bone. Since the Ilco 683 Combination Lock article would appeal to you safe cracking and servicing aficionados, I am going to give you an exclusive number to call that is linked to a data base with lock drill points for any (and every) safe you can imagine, from B-rate to TRTL-30x6. The only catch is you must know the safe manufacturers name and it must have a serial number present.

To use the system, simply call the number and an automated message will ask the manufacturers name. You then simply speak the manufacturers name. The automated voice will repeat the name at which time you enter the containers serial number. You will then be given combination lock and key lock drill point information. It's incredible.

The phone number to this safe information data base has never been released before this time. The number is ...

## **Publishers Note:**

*I'm sorry to report that Greg has suffered a mild relapse and is incapacitated at the moment. We wish him a speedy recovery and he should be back next month.*

*Mark Goldberg*





S E P T E M B E R 1 9 9 8

# Letters

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length.

## AAA Home Repair

This is in reference to the May Mango's Message, about AAA's foray into the home repair business.

I don't think we have much to worry about. The trades listed employ skilled, expensive technicians. They cannot, and will not, work for peanuts like some trunk slammers AAA uses to unlock cars. A fie on their parade!

*Richard Formica  
Florida*

## Déjà Vu on You

I read the July Mango's Message story about the %&\$#& Brother fax machine and laughed my head off. I had the EXACT same experience with Brother. I will never buy another one of their machines either. Period.

Also tell Dale that the safe in his July article is not a Diebold, but rather a Docutel made exclusively for the banking industry. *Dave McOmie  
Hawaii*

## It's Easier and Better

I am very proud of "our" magazine, *The National Locksmith*, because you include enough information to help me understand the new things and encourage me to learn more.

When I wanted to run an ad in your classifieds I looked in a back issue of TNL and it told me very simply how to do it and where to mail the information.

When trying to do the same thing in "brand Xs" publication, I finally quit trying after three attempts. They would not help, even over the phone.

*Keep up the good work.  
Vic Laramore  
E-Mail*

## Proof is in the Pudding

Just a comment in response to the Tom Bates letter, July issue of *The National Locksmith*. Tom, I believe most of us would agree with you about the Sheriff's department in your area. In my opinion that's the biggest crime of all when the folks that are supposed to enforce the law, ignore the law. Hopefully they will come around.

I live in a very small town in the southern part of Illinois with a population of 6,750. Most of my business is in Kentucky, so when the new license law went into effect I wasn't sure that I would apply. In addition, the City and County were both opening cars, and there is very little commercial business in this town.

However, I did apply for my license because I wanted to be legal. Like you, I didn't think the law



would be enforced, but to my surprise it is being enforced this far from Chicago.

I filed two complaints with the license department about part-timers. So far the license department has contacted one of them and his phone number has been cancelled. Hopefully the other will soon follow.

I've been much luckier than you when it comes to our police departments. I wrote both of them letters explaining the new law, and believe it or not, they have stopped opening cars. I have gone through this licensing procedure in two other professions and have realized that it takes time for the enforcement procedure to work.

*Ed Hamm  
Illinois*

## Who Needs Another Directory?!

I have to protest the issuing of a Buyer's Guide with a few technical articles in lieu of the regular informational copy sent out every month. I do not need another Buyer's

**The National Locksmith**  
**1533 Burgundy Parkway**  
**Streamwood, IL 60107**  
**Attn: Editor**



**Continued from page 10**

Guide. I have dozens of them. What I need is information on a consistent basis.

It seems as if you are charging us for something we don't need. Sending us a Buyer's Guide in December tells me you do not want to trouble yourselves during the holidays to get out information to us. How about it? Why can't you send us out a December copy as well. You charge enough for the magazine!

*R. Galcik  
Pennsylvania*

**Publishers Note: Hey, we only charge \$41 for a one year subscription, and if you take a two year subscription, it works out to only \$33 a year... that's only \$2.75 a month! If you don't learn at least \$5 worth a month from each issue, something's wrong here!**

**Seriously, though, lots of people like a Buyer's Guide, but we do also include articles so you get both in one magazine. I hope you like the other 11 months.**

**-Marc Goldberg**

## My PSI Experience

Regarding PSI Security Inc., mentioned in Mango's Message (Feb. '98), I'd like to share my experience. I'll try to make it short, but here is a chronological line of events in regards to my dealings with the company:

March 1996- I was contacted by Lewis Ladd. We agreed to be a distributor in Michigan for their product. They stated the units would be sent on or around June 96. We paid by credit card-Huge mistake.

June 1996- PSI stated that there were some changes in the design and would send units some time in July 96.

I again called "Lou". He again stated that they would be sending them soon!

After many calls with our concerns, we asked for a refund.

November 11, 1996 - Lou, the General Manager, stated that a check would be mailed on 11/14/96 for the amount of \$189.02.

December 3, 1996-Lou stated Check #1663 was sent that day.

December 10, 1996— Sent better business bureau complaint- still no check! Called Lou and left a message that the better business bureau will be involved.

December 13, 1996- Called Lou again and stated that check has not arrived. He stated that if check has not arrived by 12/16/96 to call him back! He stated once again that the check has been sent!

December 31, 1996- Called Lou- he says that a check was cut on 1/2/97, mailed on 1/3/97, should receive by 1/7/97.

January 14, 1997- Still no check, called Lou and spoke with him, he states that check was made and mailed on 1/10/97. Now it's check number 1787.

January 23, 1997- I called for Lou again and spoke with an office girl. She stated that check was sent out on Jan 21, 97 although she could not tell me what number the check was.... She was very nervous speaking to me. I stated that I wanted a check number, and to call me back ASAP. I received no response.

February 1997- We received a check numbered 1687- we thought our problems were over but we were wrong again. The check bounced NSF - uncollected funds.

February 1997- From then on we tried to deal with PSI through the better business bureau. That failed due to PSI Security Inc. denying their mail. See letter from better business bureau dated February 2, 1997:

-----  
Better Business Bureau  
22 E. Washington Street, Suite 200  
Indianapolis, IN 46204 (317)488-2222

February 2, 1997

Mr. George Coffey  
Coffey's Bonded Locksmith Services  
3607 Ottawa Street  
Kalamazoo, MI 49006

RE: PSI Security Inc.

Dear Mr. Coffey:

In the process of trying to pursue your complaint, our communications to the company was returned to us

by the post office marked "Return to Sender" for one of the following reasons:

X\_\_ UNCLAIMED

\_\_ REFUSED

\_\_ ADDRESSEE UNKNOWN

\_\_ INSUFFICIENT ADDRESS-  
UNABLE TO DELIVER

If you can obtain a current address, we will be glad to pursue your complaint further.

We are sorry, the company has not responded to the bureau, therefore, the bureau will be unable to assist you further. This unanswered complaint will be reported to the inquiring public. If you wish to pursue this further you may wish to contact an attorney.

Sincerely,  
Diane Dove  
Conciliation Specialist

"Everyone Profits From Doing  
Business Better"

-----  
Since that time we have not heard much in regards to PSI Security Inc. We have continued to try and get our money back with no success.

We have very recently hired a collection agency to try and secure our money. This accounting is as complete as my records shows, although there have been numerous calls made that we have not kept records of.

I find it very interesting that this company can operate under this kind of deceit. Even when they have written a bad check in the amount of \$189.02. If you or I had written a bad check in this amount we would be charged with a FELONY, we have contacted the authorities and they state they can only be charged for a misdemeanor.

There are many other considerations like we would have had to go to Indiana to get an attorney, etc. The point being it would cost more to try and get the \$189.02 back than it was worth.

Just thought others would be interested in my fiasco with P.S.I. as well as know just how little help the BBB can be without the cooperation of the company in question.

*George Coffey  
Michigan*

**TNL**



# Security Café

**DROP IN FOR  
TOOLS, TECHNOLOGY  
& EQUIPMENT**

## DoorKing Re-Designed Unit



DoorKing has re-designed its model 1802 standard telephone entry system. At the same time the company has announced lower prices for its entire line of standard auto-dialer telephone entry systems.

The new model 1802 features a re-designed face plate that now incorporates lighting to illuminate the keypad during the night. It also has a built-in clock/calendar that can be programmed to automatically open a door or gate at predetermined times, or to set time zones for entry codes. A unique feature of the 1802 is the ability for it to store a "Flash Code" which is an entry code that is valid on a single day only, then automatically deactivates itself.

## Trine Introduces Security Sensor

Trine's new Infrared EN LB optical sensor automatically confirms positive latching of a lockset within any Trine EN Series Heavy Duty Electric Strike. It utilizes a nonmechanical Honeywell® IR sensor featuring a weather resistant



heat sink module and is unaffected by ambient light. There are four sensitivity settings allowing adjustment for various latchbolt configurations. The Security Sensor option is available on 10 EN Series Electric Strikes. It permits remote monitoring of a door's secured condition by confirming engagement of the lockset and electric strike. It continually monitors whether a latchbolt has been retracted by transmitting a signal that can be implemented in either an audio or visual notification system.

## Blackhawk Safe Combination Generator

SCG: Safe Combination Generator is a software utility that generates random safe combinations satisfying your criteria for forbidden zone, last digit, and adjacent number separation. Guidelines for your favorite locks and/or customers can be stored; it also prints combinations with complete opening instructions for your customer.

## DynaLock Corp Introduces 6450 Exit Sensor Bar

DynaLock Corp introduces the first all metal non-latching UL listed 6450 Exit Sensor Bar designed

## Stanley Introduces Patio Door Hinges

A new line of adjustable hinges, designed specifically for residential use on solid wood frame patio doors has just been introduced by Stanley Hardware.

The hinges adjustability feature enables the door manufacturer, contractor and/or home owner to square the door either vertically or laterally within the door frame. The hinge set consists of three hinges including the adjustable middle hinge with the top and bottom hinges designed to act as floaters.



specifically to release electric locks when activated by any means including touch, clothes, carts or ADA devices. Reliable optical sensors eliminate complicated tune-in and costly call backs. All metal construction, including end caps, resists impact, fire, and ensures total compatibility with architectural finishes.

## Mas-Hamilton Introduces New Keyless Door Lock

Mas-Hamilton announced the upcoming release of the PowerLever® Door Lock Series, a keyless, electronic access control door lock designed specifically to address the most stringent



security requirements for stand-alone security in door applications.

Ideal for industrial and institutional applications, the PowerLever Door Lock Series targets two important security issues: 1) Access Control — Permits management to precisely control and monitor access to specific doors. 2) Traffic Control — Prevents the general public from accessing restricted areas.

## New Locknetics Exit Control Devices Offer Dogging

The 6000 Series SmartExit® devices from Locknetics Security Engineering now includes two



Continued from page 14

S E C U R I T Y C A F É



rim latch exit devices with dogging. The model 6010BDG offers Electrified Basic Dogging, while the 6010EDG features Electronic Dogging. Both are hard-wired systems, with low current draw and automatic 12 or 24 VDC voltage selection. Both are also UL listed for A label fire rated openings, are non-handed, and may be field-cut to 36", 42" and 48" sizes. Electrified dogging provides remote control of access and egress, while maintaining the fire rating of the opening.

### New Von Duprin "Request To Exit" Pushpad

New from Von Duprin is a pushbar with an active pushpad, equipped with a monitoring ("request to exit") switch to inhibit alarms for authorized exiting.

The 330TBSK and 350TBSK units feature grooved or smooth outer cases respectively, for use as companion units to Von Duprin Series 33, 35, 98 and 99 exit devices. They are available in widths of 3 ft. and 4 ft.

The pushpad incorporates an internal SPDT switch that is designed as signaling switch, rather than to control a load. The units are supplied with a 3 ft. cable at the hinge side of the door.



### Yale Introduces New Cylindrical Lockset



The new American made 5300LN Series Grade 2 Key-in-Lever Cylindrical Lockset is now available from Yale offering the latest in Vandal Resistance with Yale's patented Free-Wheeling-Lever design which allows the lever to disengage when pressure is applied in the locked condition.

The new 5300LN Series replaces the 5300L series and carries a 3 hour UL fire rating. It is available in 3 popular lever designs, 8 finishes, and 10 functions.

### New 7900/8900 Series Surface Closers From DORMA

The DORMA Group introduces two new narrow-projection surface closers - the 7900 and 8900 series-



which are well suited for high-profile architectural, institutional and other commercial applications. The 7900 and 8900 series conform to the requirements of ANSI A156.4 Grade 1 and offer a combination of durability, reliability and appearance. Both offer spring power adjustment, self-adjusting backcheck and optional delayed action.

Both the 7900 and 8900 series are available with a wide assortment of specialty arms, plates and brackets to suit a variety of applications, as well as electroplated architectural finishes.

### Hirsch Announces Access Control Device



Hirsch Electronics Corporation, a leading manufacturer of access control systems worldwide, announces the first truly secure access control device. The ScrambleProx combines the reliability of a secure keypad with the convenience of a proximity card. By hiding a proximity

reader in its patented ScramblePad™ electronic keypad, Hirsch has created a dual technology device with the option of controlling doors in a keypad-only mode, with the card only, or for the highest security, a combination of the two. This added flexibility makes the new Hirsch product an ideal device to help those responsible for facility security address the Americans with Disabilities Act (ADA).

### ABLOY Electronic Locks For Narrow Stile Doors

ABLOY EL410 (fail secure) and ABLOY EL411 (fail safe) automatically deadlocking solenoid lock cases are equipped with an integral microswitch to indicate unlocked/locked position. The lock can always be operated by key from outside and by handle from inside. Because of its patented "sliding" bolt (the door can be opened by pushing or pulling), this lock is ideal for installations with swing door operators. The lock can be controlled by a variety of impulse generating equipment, e.g. card reader, key pad, timer and push button. Available in 12VDC and 24 VDC.

TNL



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RESOURCES INC.

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are working together  
to bring you the best  
in locksmith tools  
and supplies.



**COVER  
STORY!**



## COMPTRONIC

by Gary Kepler

**W**hen you see how simple Sargent & Greenleaf's Comptronic™ Electronic Safe Lock is — both to install and to use — it is clear that this product was designed with input from those who would be using it. From the end user to the safe manufacturer to the locksmith, Comptronic was created to be the most user-friendly and secure electronic safe lock available today.

The Comptronic's line of six different models, all UL Type 1 listed, provide considerable opportunity for locksmiths in the retrofit market. The ease of installation is attractive to locksmiths looking to make extra money in electronics, while its ease of use makes it popular among end users.

Comptronic locks provide immediate feedback so users know exactly whether they're accessing their lock correctly, saving considerable time and aggravation and significantly improving security.

### Reliable. Simple. Secure

Its reliability, simplicity and resistance to break-ins make Comptronic appropriate for use on any safe or door that requires a combination lock, from bank vaults and ATM rooms to safes in retail stores and gun safes at home. Battery power offers quick access, and each set of batteries provides over a year of openings. Batteries are housed behind the keypad and can be changed easily without losing any programmed information.

Opening the Comptronic Electronic Safe Lock is literally as easy as dialing a phone number. There is nothing to turn — just enter a six-digit code plus the #key as the "send" signal. Programming and re-programming can be done right on the keypad and require only short, simple command and program sequences. Distinct beep patterns provide immediate feedback, both when opening the lock and when programming, to signify acceptance or rejection of the code entered.

One of the primary security features of the Comptronic is that it puts an end to day-locking, a common practice that leaves a combination dialed in for fast access but also leaves a container unsecured. With Comptronic's quick access and automatic relocking, there is no longer the need or opportunity for employees to day-lock the lock.

### Installation

The Comptronic Electronic Safe Lock has been designed to use the same mounting screw locations and occupy the same space as any standard mechanical lock, dial and dial ring. The Comptronic series uses standard mounting dimensions for simple retrofitting in existing safes. Most installations require no more than a few minutes and a medium phillips head screwdriver.

If you must remove the spline key of an old mechanical lock, add a pair of diagonal cutters to your list. Retrofit installation steps for the basic Models 6120, 6121, 6123 and the new 6124 are as follows:

First remove the old lock. (See photograph 1.) If there is a mechanical lock present, removal usually requires little more than removing the dial, dial ring, and lock case.

File or ream any sharp edges from the spindle hole to prevent damage to the wire cable, then run the Comptronic's connector wire through the spindle hole. Gently pull the connector and all excess cable to the outside of the safe. (See photograph 2.)

With the phillips head screws provided, attach the lock to the safe's mounting plate. Be careful to avoid crimping or crushing the cable under the lock body. (See photograph 3.)

Run the connector and wire cable through the center hole of the mounting base, then mount the base on the safe door using the existing holes for the dial ring. (See photograph 4.)





Install two 9-volt alkaline batteries in the keypad's battery holders. (S&G recommends fresh Duracell® alkaline batteries.) (See photograph 5.)

Insert the wire cable connector into its receptacle in the keypad housing. (See photograph 6.)

Tuck any excess cable length away from the spring clips that will secure the keypad to the mounting base, then snap the keypad cover into place on the base. (See photograph 7.)

When the installation is complete, test the lock three or four times before closing the safe door to ensure proper operation.

### Security Solutions

Although product features and capabilities vary by model, the Comptronic line offers a broad range of security solutions. One of the most significant features of the product is the fact that it can be used independently or integrated with existing security systems. Various options are available that enable the Comptronic to work with time locks, alarm systems and CCTV. For customers using central security control, this means significantly greater control and flexibility when it comes to securing safes and other controlled areas.

Some of the options available within the Comptronic line include the following:

- Several different time delay options that let users program an opening delay as well as an option to override the delay when necessary.
- A bolt position indicator (BPI) that lets users know at all times whether their lock bolt is locked or unlocked. (This is true only if the BPI is hooked up to some kind of indicator.)
- A built-in duress signal that is sent to the police or alarm company simply by changing the last digit of the user code.
- Remote enabling of locks to ensure that locks stay secure until central security sends a signal allowing the lock to be opened by an authorized user.
- The ability to run multiple locks from one keypad; for an outer and inner door configuration, for example.
- The ability to use two different keypads to open a single lock; for example, to start the time delay feature by remote activation.
- A bolt extension indicator that reassures the user he's done everything necessary to secure the door.



**1**  
Remove the old lock.



**2**  
Pull the connector wire through the spindle hole.

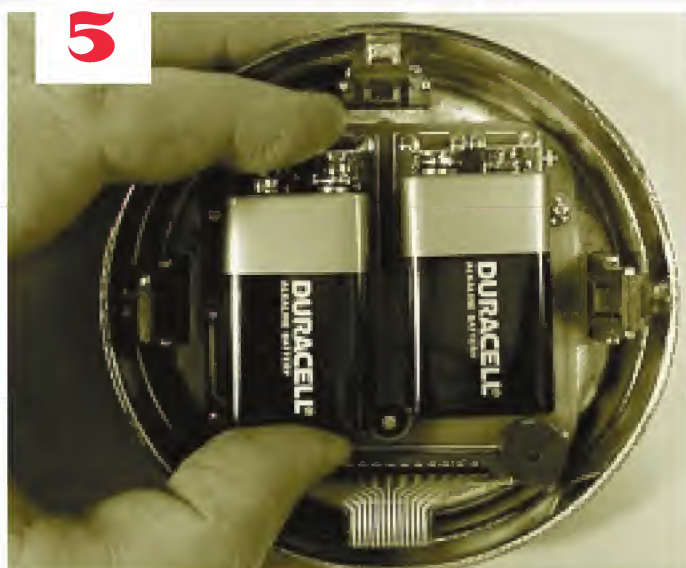


**3**  
Attach the lock to the safe's mounting plate.

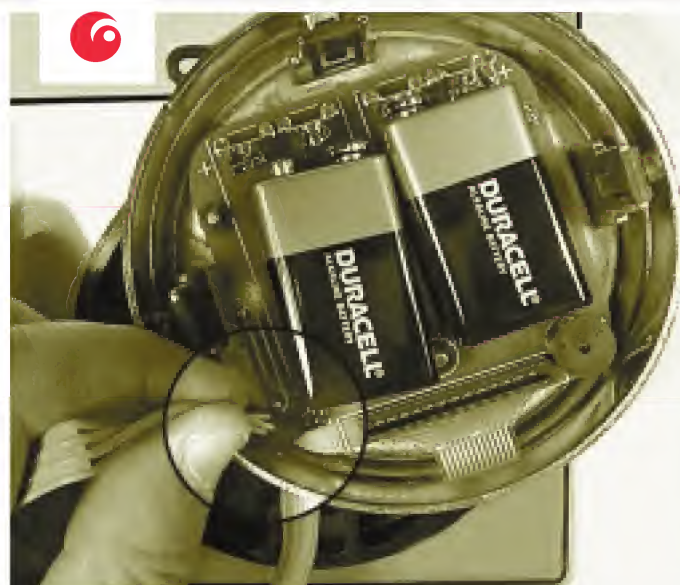


**4**  
Run the connector and wire cable through the center hole of the mounting base then secure screws.





**Install two 9-volt alkaline batteries.**



**Insert the wire cable connector.**

- A tamper indication developed to meet Germany's VdS requirement, which lets the user know whenever the Comptronic keypad has been removed from its base without authorization.
- The ability to enable or disable user codes; for example, to lock-out employee codes after hours.
- Dual control, which requires two six-digit codes to open the lock.
- Audit trail capabilities that tell end users which codes opened the safe as well as any programming changes that have occurred.



**Tuck any excess cable length then snap the keypad cover into place on the base.**



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- A door access control system for applications like ATM rooms, telephone and computer equipment storage rooms, or any controlled area where an auxiliary security door lock is beneficial.

### **Conclusion**

Sargent & Greenleaf has always been known for the high quality of its safe locking products. In December, the company passed a recertification audit of its quality system for ISO 9002. According to Quality Assurance Manager Tony McIntosh, "In the past 12 months, less than .001% of S&G electronic locks shipped were returned because of manufacturing defects. Our commitment to quality really does show up in our products."

For more info call: (606) 885-9411.

**TNL**



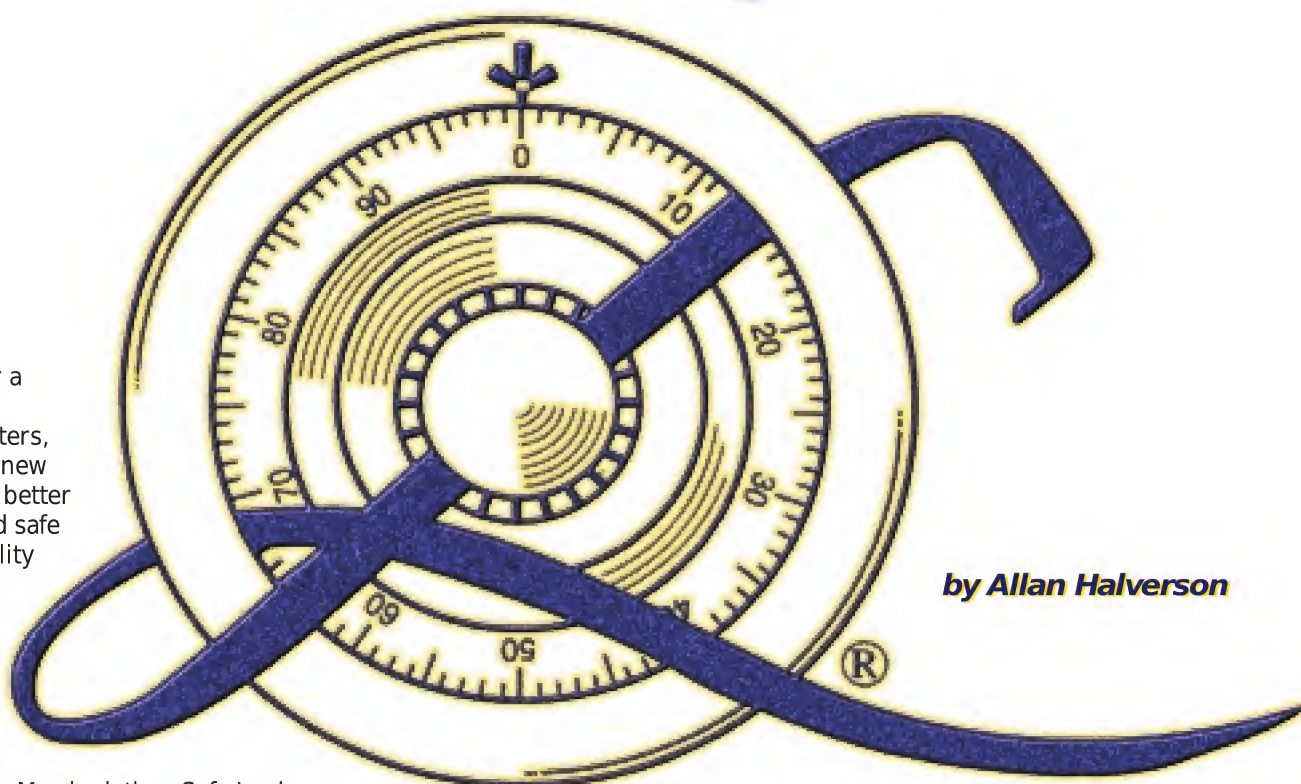
**COVER  
STORY!**

# Timelock Servicing Class

**A** little over a year ago Lockmasters, Inc. dedicated its new training center to better serve the lock and safe industry with quality education. Since that grand opening many classes have been taught. The old standbys like Combination Lock Manipulation, Safe Lock Servicing, Professional Locksmithing and the Government Security Container classes were well received as always. Then there were the new Signature Series Classes like Automotive Opening, Automotive Servicing, CCTV, Advanced Picking, Advanced Impressioning, Simplex-Unican Certification and Pushbutton Manipulation.

This past June, Lockmasters, Inc. revived their Timelock Servicing class. While the class was small (*see photograph 1*) compared to other programs, the students received an excellent education in timelocks.

Upon entering the training center, each student is greeted by the Harry C. Miller lock collection. This collection is the most comprehensive collection of safe locks and timelocks in America, if not the world. Glass cases filled with Mosler, Sargent & Greenleaf, Diebold and Yale timelocks abound. There are other manufacturers of timelocks as well like James Sargent's first timelock built in 1874, Sargent & Greenleaf's timelock with integrated combination lock made in the 1880's and LaGard's digital timelocks of today. The Harry C. Miller lock collection is an education in itself.



by Allan Halverson

The instructor for this timelock servicing class was Ralph Hamilton of Hamilton's Lock & Safe in Gainesville, Florida. Ralph got his start with Diebold and has extensive training and experience in timelocks, vault locks, safe deposit locks and vault door service. He is also well experienced in other areas of the safe and vault and locksmithing industry.

There were no long lectures when the class was convened. Within the first hour, Ralph had the students out in the museum area for hands-on training on three Diebold vault doors designed and mounted for this purpose. (*See photograph 2.*)

Each of the three Diebold vault doors were different. The students worked in teams to remove the timelocks from each of these doors. (*See photograph 3.*)

**Tech Tip:** A qualified technician should inspect and clean timelock movements on an annual basis. If damage is seen during the timelock inspection, there are two options available. Repair the movement on the job or replace the defective movement with a "loaner" until the proper repair can be made.





**1. The students received an excellent education in timelocks.**

**2. Hands-on training with three Diebold vault doors designed and mounted for this purpose.**



**3. The students worked in teams to remove the timelocks from each of these doors.**



**4. With the timelocks in hand, it was back to the classroom.**



With the timelocks in hand, it was back to the classroom. (See photograph 4.) Ralph explained the purpose of the Escapement, Balance Wheel, Balance Spring, Collet, Stud, Balance Staff, Rollers, Regulator Pins, Jewels and Gear Train Factors. He explained reserve power, hand and ultrasonic cleaning as well as lubrication.

**Tech Tip:** Power is supplied to the timelock via the mainspring. When the mainspring is wound into a coil, it is

constantly trying to unwind. It is this unwinding action that produces the power to the timelock movement. This power is then transmitted to the movement's gear train. The gear train spreads the power from the mainspring over an extended period. It is the escapement that controls the speed of the gear train, holding the main gear rotation to one turn each 24 hour period. The escapement only permits one tooth of the escape gear to pass at a time.

**Continued on page 26**



Continued from page 23

**5. Step by step the students began the task of disassembly.**



Step by step the students began the task of disassembly. (See photograph 5.) As each part of the timelock was removed, Ralph explained its purpose again as well as its relationship to the other parts. When the morning session ended, all of the timelocks from the vault doors had been disassembled and carefully examined. (See Photograph 6.)

The afternoon session began with Ralph asking for and receiving a box of giant paper clips. These giant paper clips were reshaped to hang parts in the pyrex beakers for cleaning and rinsing. This was just one of Ralph's many tricks or shortcuts that he has picked up over the years.

Every part of each of the timelocks was cleaned and rinsed using an ultrasonic cleaner.

Tech Tip: Ultrasonic cleaning is able to clean entire assemblies and is the only recommended method for these delicate movements. Carbon Tetrachloride has long been the choice as a cleaning solvent. This solvent is extremely toxic and dangerous to use. An alternate cleaning solvent suitable for use on timelocks is L&R Fine Watch Cleaning Solution. It is not toxic or explosive, but does contain ammonia, which emits a slight odor. To avoid any personal injury, use all cleaning solvents in a well-ventilated area.

The following cleaning equipment is required: An ultrasonic cleaner, three 600ml Pyrex Beakers or jars of equivalent size, L&R cleaning fluid and rinse, some type of dryer (hand held blow dryer) and lint free clean white toweling.

Cleaning is done in the following four (4) cycles:

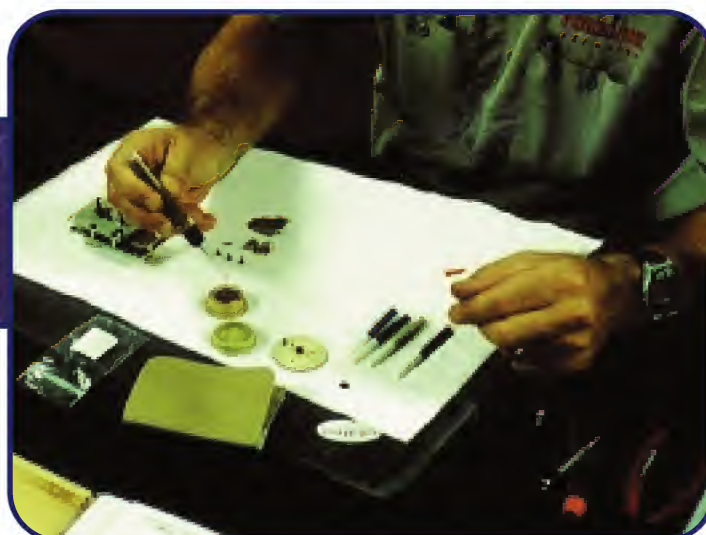
1. Ultrasonic Cleaner for four minutes, drain and blow excess solution.
2. Ultrasonic Rinse for two minutes, blot and blow excess solution.
3. Ultrasonic Rinse for four minutes, blot and blow excess solution.
4. Let parts dry for ten minutes.

The parts were then dried and laid out on lint free tissue in preparation for re-assembling. As each of the locks were put back together, lubrication was discussed and implemented. (See photograph 7.) Ralph not only talked about over lubricating a lock, he showed the students the difference in the sound the movement makes as power is let down when too much oil is present. Another one of his tricks.



**6. When the morning session ended, all of the timelocks from the vault doors had been disassembled.**

**7. As each of the locks were put back together, lubrication was discussed and implemented.**





**8. With the locks back together the students were back to replace each of the timelocks in the correct vault door.**



Tech Tip: There are two methods of oiling.

1. Place the balance jewels on a bench anvil and carefully introduce the tip of an automatic oiler in the hole jewel.
2. Disassemble the jewel and place a drop of oil on the inside flat surface of the cap jewel. Warning: Do not push on the oiler or you may push the jewel through the spring. Always oil the impulse faces of the pallet stones in the escapement. If you cannot do this directly, lightly oil every third escape wheel tooth on its impulse face as the movement is running.



**9. Each movement was wound so it would open at 9:00 am the following morning.**

With the locks back together, the students were back into the museum to replace each of the timelocks in the correct vault door. (See photograph 8.) After the first timelock was securely in place, the vault door was checked for proper operation. When all of the timelocks were in place on each of the vault doors, the students wound each of the movements so they would open at 9:00 am the following morning. (See photograph 9.)

Tech Tip: In the field, do not set the time on the timelocks or leave word about their status. Have the person responsible



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**10. It was discovered that the slide bar had been placed into the case incorrectly. Once this situation was corrected, the timelocks were re-wound.**

for the timelocks reset them, or at the very least make that person aware that the timelocks are at zero after servicing.

Ralph reviewed the lessons from the previous day. At 9:00 am he took the students to the vault doors to inspect the timelocks and insure that they did in fact operate correctly. Two of the vault doors were operating correctly. The third vault door was not. While the timelock movements wound down, the snubber bar would not function. Taking a closer look at the timelock case, it was discovered that the slide bar

had been placed into the case incorrectly. Once this situation was corrected, the timelocks were re-wound to open at 1:00 p.m. that afternoon. (See photograph 10.)

**T**he rest of the morning found the students working on a variety of timelocks. These were Yale 72 and 120 hour, Sargent & Greenleaf 144 hour, Bankers Dust Proof, Mosler DO-All and others. These were studied, disassembled and re-assembled and discussed.

At 1:00 p.m. the third vault door was checked again. This time the timelock and case parts worked correctly and the vault door was opened.

**Tech Tip:** When completing the job, make every effort to completely test the components. These checks have to be made with the door open. Prove out every combination change whether it is an inspection or simple tightening of a bolt by operating the door through its locking-unlocking cycle while the door is in the open position.

Additional locks were looked at, worked on and discussed for the remainder of the day.

The last day of the class was dedicated to Sargent & Greenleaf and LaGard delayed action timelocks. These too were taken apart and studied. The LaGard digital timelocks were discussed and studied and each student had an opportunity to set opening times.

Safe, vault and timelock service skills are necessary requirements for the well versed technician. If you are interested in any of these classes, contact:

Lockmasters, 5083 Danville Rd., Nicholasville, KY 40356-9531  
Phone: 800-654-0637, Fax: 606-885-1731. **TNL**



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# Concept Plus or Minus?

by Tom Lynch

**A**s the title implies, we will examine a product called Concept Plus. (See photograph 1.) These cylinders, the model 3165 Plus, may be purchased from Reiss Wholesale in Brooklyn, N.Y. (718-434-6977). They are imported from Brazil and sold through Top Lock Inc. located in Brooklyn, NY. They are a result of suggestions from hundreds of professional locksmiths and contain features that address many concerns in today's marketplace.

These cylinders are made of solid brass and utilize a Schlage SCI keyway.

They are available in both US3 & US26D. Stainless steel case hardened anti drill pins are positioned within the plug of the mortise cylinders (see photograph 2) while the rim cylinders have both plug and one body anti drill pin. All top pins in both are spool drivers for pick resistance. An add-

itional set of side pins are in place at the left side of the cylinder at approximately the 8 o'clock position. (See photograph 3.) These pins create a 10 pin cylinder, further increasing pick resistance.

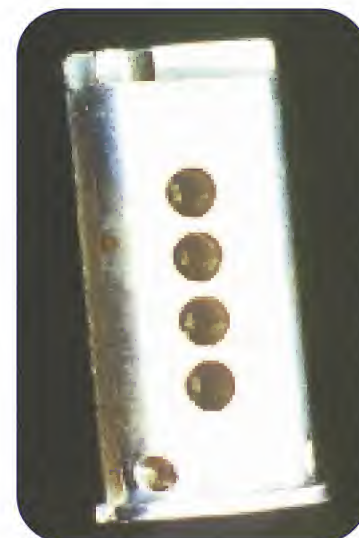
The bible consists of screw caps rather than a slide cover, similar to the Medeco product, however, they are not interchangeable! These caps are #6-40 x 1/8" fine thread socket style and can be purchased through your local hardware store for approximately \$0.20 cents. Use a 1/16 hex key to remove them.



**1. The Concept Plus model 3165 is imported from Brazil and sold through Top Lock Inc. located in Brooklyn, NY.**



**2. Stainless steel case hardened anti drill pins are positioned within the plug of the mortise cylinders.**



**3. An additional set of side pins are in place at the left side of the cylinder at approximately the 8 o'clock position.**





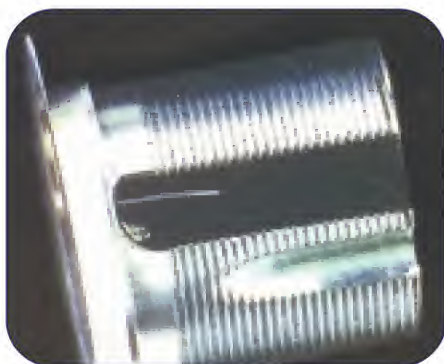
**4. The side pin springs are smaller in comparison to the top springs and sit within the hollowed side pin.**

The keys are of a distinctive design for positive recognition as well as ease of handling. They are strong and offer a low level of key restriction if utilized properly. Use of your key duplicating machine with these keys is another plus!

**T**he top and bottom pins are standard sizes pinned to Schlage space and depth dimension. The side pins are different! They are smaller and have a hollow with a small hole in the center for clean-out purposes. The side pin springs are also smaller in comparison to the top springs, and sit within the hollowed side pin. (See photograph 4.) Spacing between cuts are .156 and their sizes are as follows: 1=.084, 2=.072, and 3=.050.

The side pins have a heavy slide cover that can be removed if needed, however, this is not recommended. (See photograph 5.) Repinning is accomplished easily by use of the removable screw caps or through the use of your follower.

You will find that in a 1" mortise cylinder there are only four side pins reducing the total number of pins to 9, rather than the standard 10. This is



**5. The side pins have a heavy slide cover that can be removed if needed, however, this is not recommended.**

obviously due to the length of the cylinder.

There are two side pin combinations. The first is assigned to the A/D keyblank. The imprinted marking "A" on the keyblank was a misprint, it was supposed to be the letter "D", so if you have either blank, their side milling combo and side pinning is as follows: 3-2-3-2-3. (See photograph 6.) Meanwhile production

has replaced the A/D designation and changed the side pin arrangement. The "E" key is combined 2-3-0-3-2. (See photograph 7.)

Concept Plus keys host the SC1 keyway, and they will enter existing cylinders with that key milling. However, standard SC1 keyblanks will not enter the Concept Plus cylinders. This can allow restriction, multiplex mastering and higher security in existing Schlage systems at a fraction of the cost. That is accomplished quite simply by the interaction of the side pins with the tip of the key. Since there is an additional bible of pins



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**6. The side milling combo and side pinning is as follows: 3-2-3-2-3.**



**7. The "E" key is combined 2-3-0-3-2.**

**8. The Concept Plus key has a 45 degree ramp on the side along with the side pin cuts.**



**9. Cut the blade down to the first landing and remove that portion of the bow so you have a turning wrench with the side cuts.**

along the side of the cylinder, there must also be a "ramping" of the key tip similar to the conventional keyblank. This is to allow the pins to rise and fall during key insertion.

The Concept Plus key has a 45 degree ramp on the side along with the side pin cuts (see photograph 8). The standard key does not. Key generation, substitution, and modification are possible, however as with any system, be professional and use OEM material.

**F**or the purpose of this article and the education of the informed craftsman or craftswoman, we will cover key generation, key modifying, and bypassing of the Concept Plus cylinder.

When you run out of either key blank and it becomes necessary to provide a "temporary" key, proceed as follows: First duplicate the plus key onto a standard SC1 blank and file a slight 45 degree angle on the tip until the key enters the cylinder.

Secondly lay the new key on its side and with your pippin or round file stroke a mark between the root cuts of the bottom pin key profile. This is the location of the side pins. You now can impression with confidence to make the side cuts. These pins will mark well and the filing depths are easily achieved.

The easy way to remember side milling depths is that the #3 depths are equal to the blade thickness or to the surface of the blade. The #2 depth is 2 or 3 strokes of your file (not heavy handed, of course!). The zero depth is a no cut. Impressioning marks can be seen even before you mark the location of the side pins with your file, so with practice you won't even need to mark your new blank. I have made temporary keys without having the cylinder present just by filing in comparison to the customers original, but I make sure to order original replacements.

Lastly, every locksmith wants to know how they can bypass this system. I was not able to pick it in the conventional sense as I only have two hands and one held the pick for the bottom pins and the other the tension wrench! The side pins made it "non profitable" to spend my time.

Drilling for the set screw was found to be reasonable.

The mortise cylinders do have an open keyway for manipulation of the lock mechanism where possible, but, don't get disappointed yet! If you have the original Concept Plus keyblanks, simply cut the blade down to the first landing and remove that portion of the bow so you have a turning wrench with the side cuts. (See photograph 9.) With this, you will have the cylinder halfway picked. Insert your picks as you normally would and pick the lock in the normal fashion.

If you don't have the original blanks, don't sweat it! Just take any

Schlage "C" change key and mark the appropriate side pin locations as mentioned earlier and file to the prescribed depths given, then cut down the key as stated. The tolerances on these side pins are very generous.

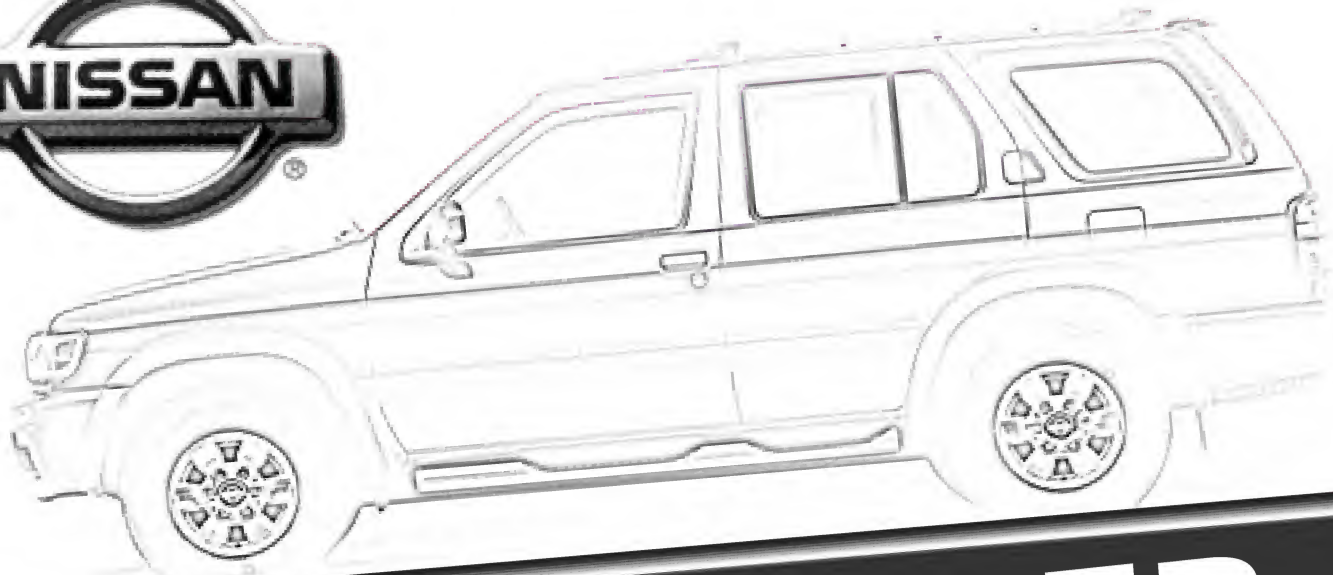
To test the durability, I installed the Concept Plus cylinders at a gas station where the doors must stay locked at all times and entry can only be with a key. The key had to be restricted to a degree since the station manager was concerned about the home center next door; and as always, cost was an issue. These doors experience such high activity that typical cylinder keyways get blown out and need replacement in about a year and a half. These cylinders were put in three and a half years ago and are still working.

Concept Plus cylinders are available only in rim and mortise cylinders which will limit your installation applications. The current cylinders are offered only with the Schlage keyway; additional keyways would offer greater opportunities.

In conclusion, the Concept Plus cylinder has many positive features to offer at a good price. This is not considered a high end system when compared to others in the industry, yet it has addressed some valid points at low cost. These keys are not found at the home centers or other hardware outlets, thus increasing your business. Their quality in relation to their price allows room for a nice profit. **TNL**



*The 1996*



# PATHFINDER



**1.** The 1996 Nissan Pathfinder was re-designed for this model year. It is the first model to go to the new Nissan keyway.

**2.** The new keyway has 10 cuts on it and four depths. There are no codes to be found on the vehicle.

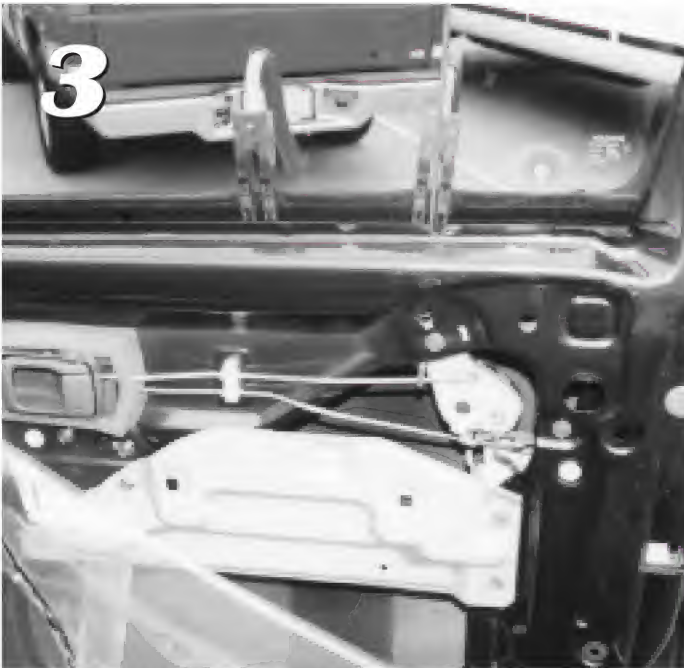


by Michael Hyde

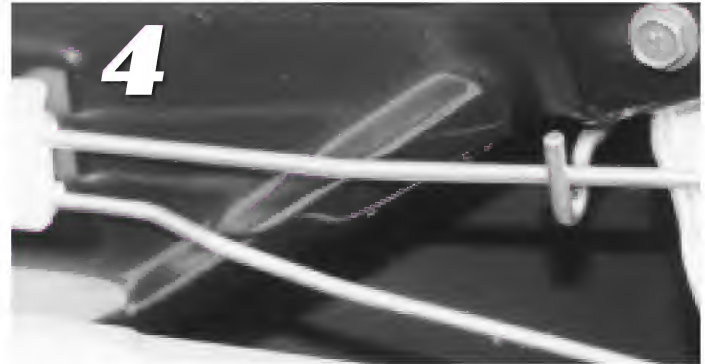
*Continued on page 36*



Continued from page 34



**3.** This vehicle has a horizontal linkage that is fairly easy to attack. To open this truck, we used a reverse horizontal slide linkage tool. It can be a little tricky hooking on to the rod, but be patient you'll get it.



**4.** Keep an eye on the lock button for any movement, then you know you're real close. Slide the linkage rod towards the front of the truck to unlock it. It is always a good idea to obtain a high-quality auto opening set.



**5.** The ignition lock is similar to other Nissan ignitions.



**6.** The steering column utilizes the two piece plastic shroud also known as the "clam shell." There are six phillips-head screws that hold the shroud together with the plastic snaps built into the individual shroud pieces.



**7.** Once the screws are removed from the shroud, you can then unsnap the two pieces. You will have to remove the plastic trim ring that sits on the front of the lock housing. The ignition lock housing uses the standard Japanese clamp-on type. The ignition housing clamps onto the steering column. You must remove the two shear-head bolts to release the lock housing. There is a couple of ways to do this, the first would be to use a scratch awl and hammer to tap the awl against the top edge of the bolt head to unscrew the bolt. Re-positioning the awl on the bolt head as you get it to move a little bit at a time. Another way would be to drill a hole in the center of the head of the bolt and use a corresponding "Easy-Out" to unscrew the bolt. One more way would be to use an Dremel to cut a slot in the head of the bolt and then you could use a stubby flat-head screwdriver to remove the bolts.

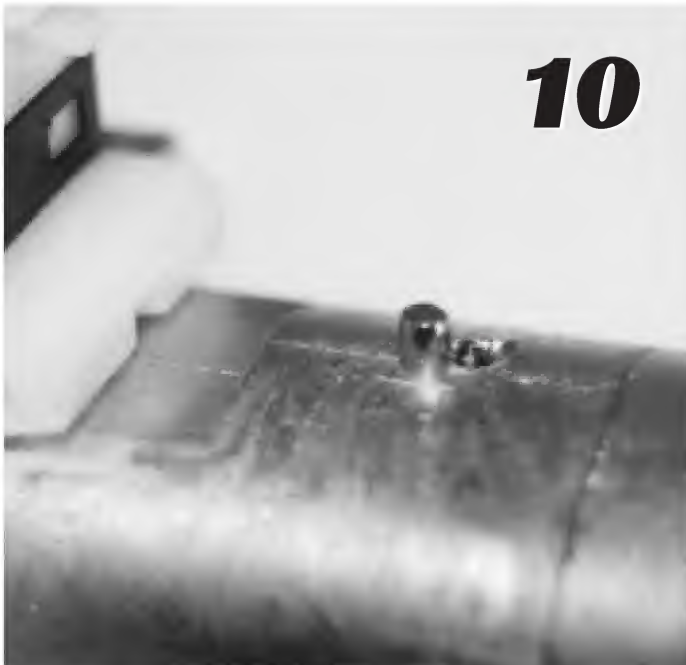




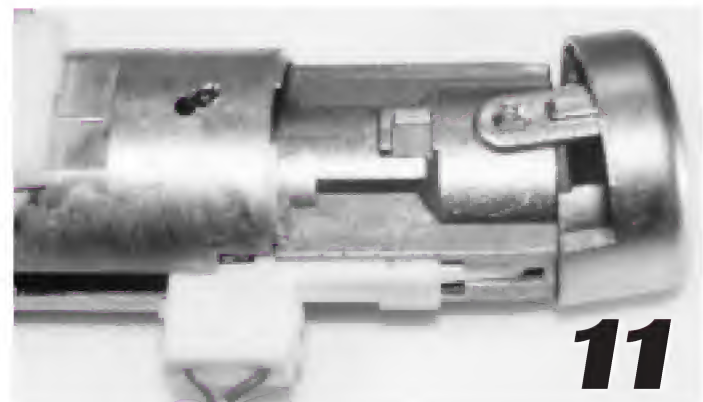
8. The ignition lock is shown.



9. The ignition housing uses a face cap that is a part of the lock housing. The face cap is held to the lock housing by way of the two opposing roll pins.



10. I usually drill a 7/64" hole directly next to the roll pin and then use a pin punch to lift out the pin. Remember for this to work easily you must drill directly next to the pin, even slightly cutting the side of the pin as you drill is the best method.



11. Now that the roll pins have been removed, you can slide out the ignition cylinder and the face cap.



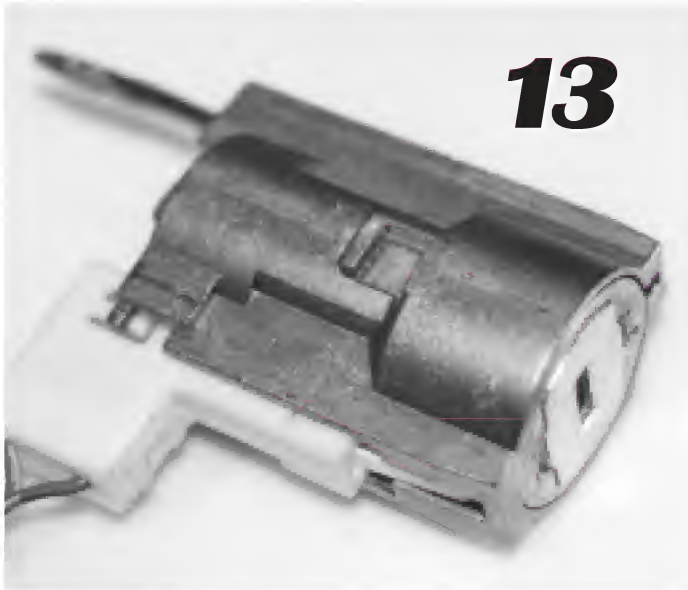
12. You do not have to worry about flying springs or ball bearings with this lock. Those moving components have been built into the cylinder housing and cylinder plug. Previous versions of similar Nissan ignitions this was not the case.



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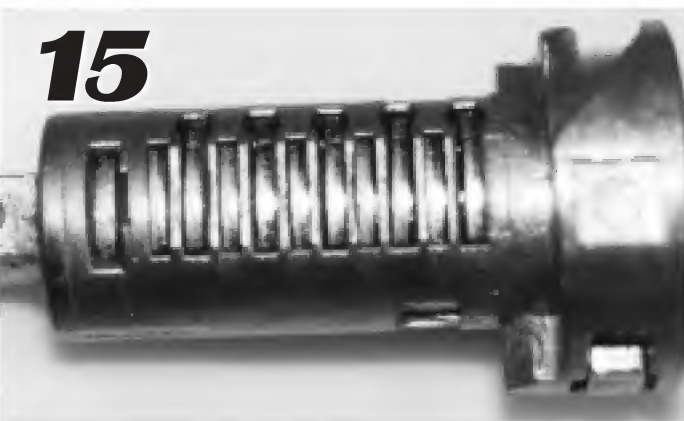
**13**

13. The ignition cylinder is shown. The electronic buzzer switch can be removed or left on for re-keying, it does not matter.



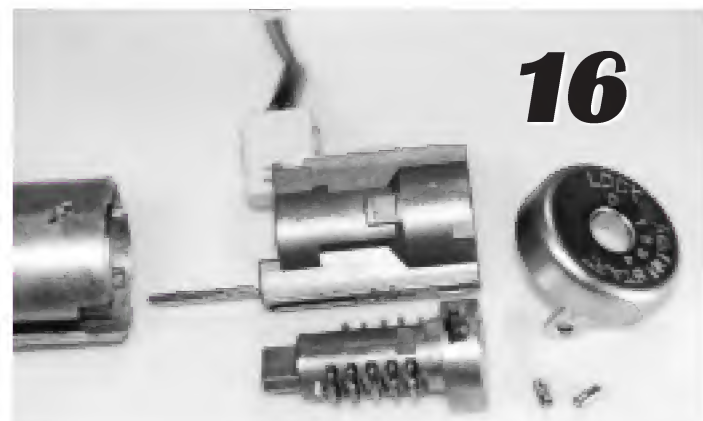
**14**

14. The cylinder plug has a small pointed spring loaded retainer on the end. Depress the retainer to slide the cylinder plug out of the cylinder housing.



**15**

15. The cylinder plug uses ten wafers and four depths. Don't worry, the tumblers from the ASP BMW kit #A-13-101 can be used to service this model.



**16**

16. The ignition cylinder is shown disassembled. The assembly consists of the lock housing, the cylinder plug, the lock face cap and the two roll pins.

## DOOR LOCK



**17**

17. The door lock is shown. The lock cylinder is separate from the outside door handle, as with many late model Nissans.



**18**

18. To service the door lock cylinder you must remove the door panel.





**19**  
*19. Remove the plastic trim ring that sits on top of the inside door release handle. It unsnaps but be gentle. Do not remove the screw that is concealed under the trim cover in the center of the door release.*



**20**  
*20. The rear section of the armrest can be unsnapped.*



**21**  
*21. With the rear section unsnapped, unsnap the forward section of the armrest.*



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**22.** Disconnect the wiring connector from the forward section of the armrest.



**23.** Next, remove the three 10mm screws that secure the armrest and door panel.



**24.** The door panel is also held to the door body by means of plastic push-in style fasteners. These fasteners are very tight-fitting and if you try to man-handle the panel you will end up destroying it. It is important for you to unsnap each fastener one-by-one. The door body with the panel removed, is shown.

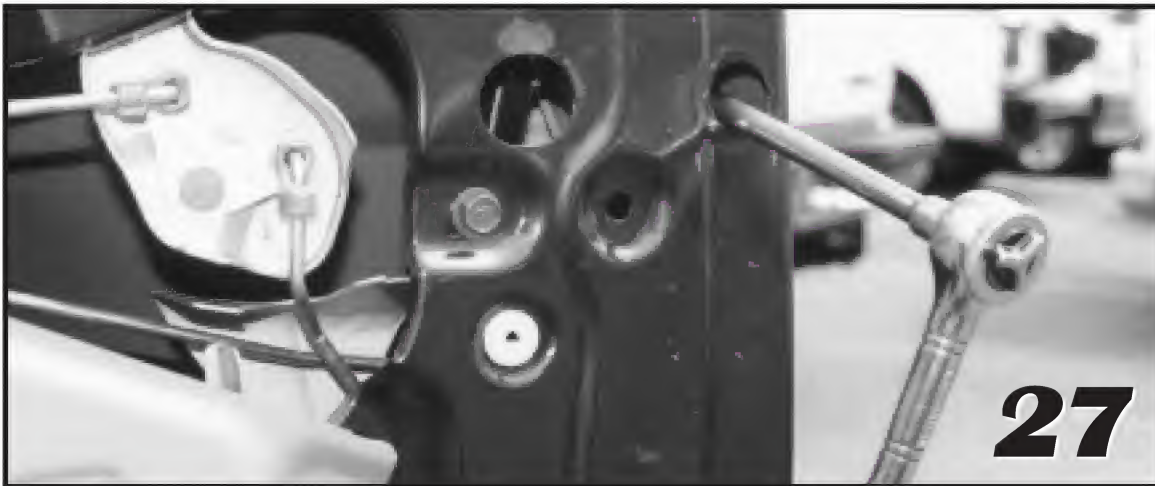


**25.** To gain easy access to the door lock, you should remove the lower rear window track. The window track is held in place by a single 10mm bolt. Remove the bolt and slide the window track out of the way.



**26.** There is a metal anti-theft lock protector that has to be removed





27. The anti-theft lock protector is held in place by a 10mm nut, that can be accessed through a cut-out in the door.



28. A view of the anti-theft lock protector device.



29. The door lock cylinder is held to the door with standard horseshoe style metal clip. Remove the electronic switch from the lock cylinder. You do not need to mark how it came off, it can only go back on in one position.

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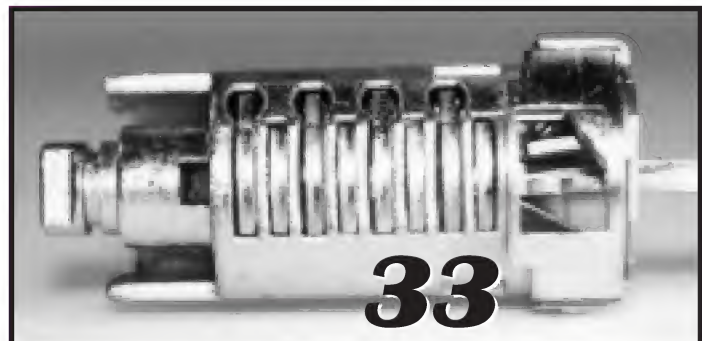
**30.** The door lock is shown. The ASP replacement cap is part number P-16-213.



**31.** The door lock cylinder can be disassembled by removing the face cap and the tailpiece. The tailpiece can only go back on in one position.



**32.** The door lock has a new type of plug spring for Nissans. It is easily removed and replaced when servicing the lock cylinder.



**33.** The door lock plug contains eight out of the ten tumblers, in positions three through ten. The ASP tumbler kit for this is the also the BMW kit, part number A-13-101.

## REAR DOOR HATCH



**34.** The door lock disassembled. The door lock cylinder consists of the cylinder housing, the cylinder plug, face cap, rubber gasket, tailpiece and retainer, cylinder plug spring and combinations tumblers and associated springs.



**35.** The rear door or hatch has a two position lock cylinder. Turn the key in the lock to the left and it will release the rear door. Turn the key in the lock to the right and it will release the rear door glass.



Continued from page 43



**36**  
36. To access the rear door lock cylinder it is necessary to remove the plastic door panel.



**37**  
37. There is a pull handle on the door. The ends have an access door built in.



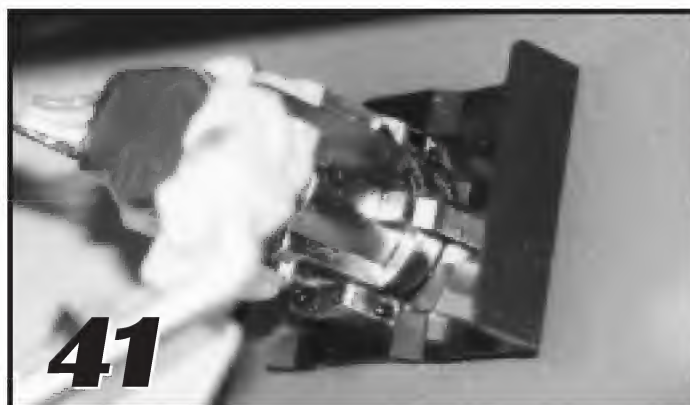
**38**  
38. Gently open the little plastic access doors to get at the two 10mm bolts. You will have to remove the bolts.



**39**  
39. Now the only thing holding the plastic panel are the plastic push-in style fasteners. Unsnap the panel carefully as to not break any fasteners.



**40**  
40. The lock cylinder is held to the door by means of a metal horseshoe style clip.



**41**  
41. There are two linkage rods connected to the tailpiece of the lock. There is also an electronic switch attached to the lock cylinder.



**42**  
42. The rear door lock cylinder.



43. To disassemble the lock cylinder you will have to remove the tailpiece and the face cap. The replacement face cap is the same for the doors and is ASP part number P-16-213.

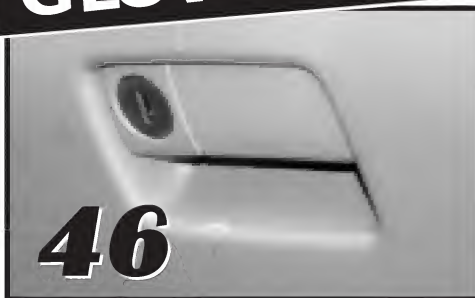


44. The door lock plug contains eight out of the ten tumblers, in positions three through ten. The ASP tumbler kit for this is the also the BMW kit, part number A-13-101.



45. The door lock disassembled.

## GLOVE BOX LOCK



46. The glove box lock and handle assembly.



47. The glove box lock is held in place by two phillips-head screws.



48. The glove box lock removed from the vehicle.



49. Depress the retainer on the rear section of the assembly to slide out the plug unit.





**50.**  
*The cylinder  
plug unit.*



**51.** *The glove  
box lock  
cylinder  
contains four  
tumblers in  
positions  
seven through  
ten. The  
tumblers are  
the same as  
the tumblers  
used in the  
other locks on  
this vehicle.*

**VITAL STATISTICS**

**Code Series:** 00001 - 22182

**Key Blanks:** Curtis: DA34, Ilco: X237, Ilco EZ: DA34, Jet: DA34NP, Silca: NSN14

**Number of Cuts:** 10

**M.A.C.S.:** 2

**Key Gauged:** Tip

**Center of first cut:** .915 (from tip)

**Cut to Cut Spacings:** .083

**Cut Depth Increments:** .026

**Spacings:** 1 - .915, 2 - .833, 3 - .750, 4 - .667, 5 - .584, 6 - .501, 7 - .418, 8 - .335, 9 - .252, 10 - .169

**Depths:** 1 = .333, 2 = .307, 3 = .281, 4 = .256

**HPC 1200CM:** Code Card: CF304, Cutter: CW1011, Jaw: A, Stop: Tip

**HPC Punch:** PCH Card: PF304, Punch: PCH1011

**Framon:** Cuts start at: .337, Spacing: .083, Block # 5, Depth Increments: .026, Key Clamping Info: Lay tip stop clip flat against left side of vise, then tip stop key against clip.

**Curtis:** Cam: DM-40, Carriage: DM-41

**A-1 Pack-A-Punch:** PAK-N4

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# Computerized Code Machines & Software

If you are ready to purchase a computerized code machine, chances are you already own, or are about to purchase, a Windows® based PC. Although most computerized code machines can work independently, you will eventually want to take advantage of your new machine's full power by using it along with specialized software for locksmiths.

## CodeMax™

CodeMax™ is the original computerized code machine. (See photograph 1.) Based on the industry standard 1200CMB machine, CodeMax™ was the first machine to put the power of a computer into key cutting.

CodeMax™ has an internal computer chip that contains over 600 different depth and spacing charts. It can cut keys with up to 14 spaces and up to 14 depths. This allows it to cut virtually all standard vehicle, commercial, residential, and furniture keys.

With optional equipment, CodeMax™ can cut ASSA V10/Twin™, Emhart Interlocking Pin™, Flat Steel and Safe Deposit Keys, Medeco Biaxial™, Commercial™, and KeyMark™, Schlage Primus™, as well as many other specialty keys.

The easy-to-use reference manual makes it simple to look up the proper depth and spacing chart by lock manufacturer, 1200 CMB card number, or by CodeMax™ number.

By pressing the Depth & Spacing Data (DSD) button and entering the appropriate number, CodeMax™ will tell you the manufacturer and inform you of the proper gauging point. It then allows you to enter the

depths of your choice. Once this has been done, CodeMax™ will create an original key in as little as 15 seconds.

CodeMax™ also has a built-in micro-meter function, with both inch and millimeter modes. This allows CodeMax™ to function as a true micrometer machine utilizing any depth and spacing measurements.



1. CodeMax™ is the original computerized code machine.



2. CodeMax™  
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comes with a  
copy of HPC's  
CodeSource™.



Like all of HPC's software, there is no need to have extensive computer knowledge to run CodeSource™. All of HPC's software programs are Windows-based, and are simple to use providing easy to understand icons, drop down menus, keyboard shortcuts, as well as comprehensive Help files.

You can access codes quickly and easily through CodeSource™ in a variety of ways: by code number, Blitz™ and Punch™ code card number, manufacturer name, or key blank number. CodeSource™ also allows you to search by bitting or even partial

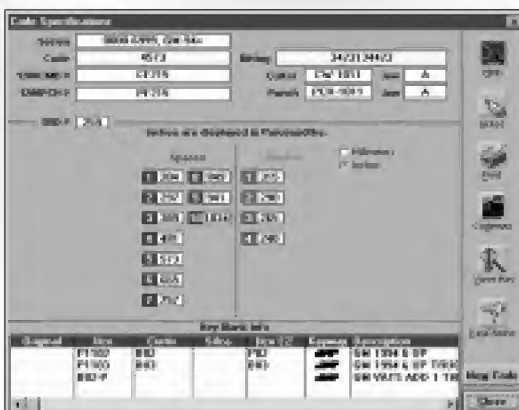
In addition, CodeMax™ has numerous features that will help make your job quicker and easier. The "feed rate" (the speed at which the key approaches the cutter) can be adjusted to move faster or slower depending on the type of key you are cutting. CodeMax™ also offers the contour (laser) cutting for automotive keys.

The true power of CodeMax™ is realized when you connect it to your IBM-compatible computer. The CodeMax™ now comes with a 25 foot 9-pin serial cable making it easy to connect your code machine to your computer even if they are in separate rooms.

CodeMax™ also now comes with a copy of HPC's CodeSource™. (See photograph 2.)

### CodeSource™

HPC's CodeSource™ is the most comprehensive, user-friendly code retrieval program on the market today! (See photograph 3.) It has a database of well over 2 million codes that can be accessed quickly and easily from your Windows® based PC.



3. HPC's CodeSource™ is the most comprehensive, user-friendly code retrieval program on the market today!

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**Continued from page 50**

KeyTrail™ does all of this from one screen, including tracking groups (rings) of keys.

KeyTrail™ allows you to import or export information. It has an impressive security system and allows you to generate optional work orders to track cylinder installation and key duplication. KeyTrail's™ built-in log stores every transaction and allows you to print them out, as well as countless other reports. KeyTrail™ supports interchangeable core (IC) systems and can interface with HPC's CodeMax™.

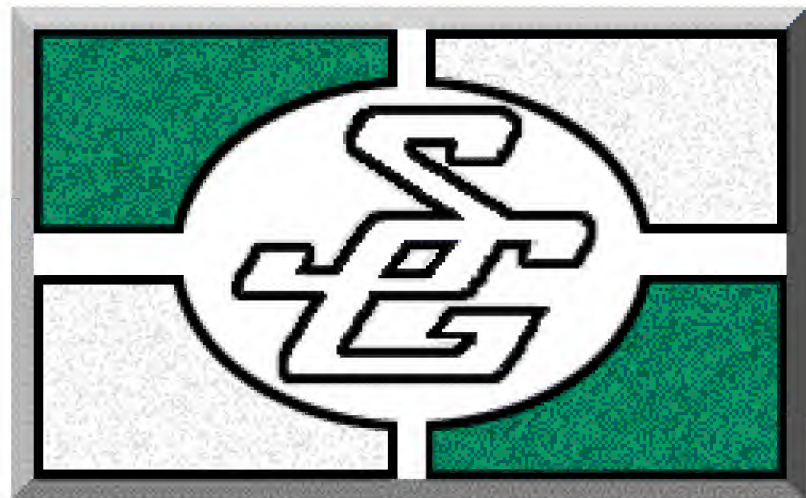
If you are still not convinced that CodeMax™ and the family of HPC software are right for you, think about this: What if one day a customer asks you to put a new lock on their entry door? They want a Schlage L Series Mortise Lock on the outside and Kwikset Titan on the inside. They just want one lock and one key to work both sides. You plead with them that the locks are from two different manufacturers and they are not compatible. They beg you to try and after many hours of finagling you finally get it to kind of work. What would you tell them the next day when they call because the lock doesn't work anymore and they want to know which manufacturer is going to fix it?

Of course this story is absurd and neither manufacturer would claim responsibility. Instead they would tell your customer the same thing you said, "Don't mix manufacturers' products if you want them to work right."

At HPC, we pride ourselves in knowledgeable and friendly technical support and customer service. Because you are dealing with just one company, if you ever have any questions about how your HPC CodeMax™ and HPC Software connects or works you are guaranteed the right answer, the first time, without any run-around.

Backed by the HPC Technical Support Department and a 1 year warranty, CodeMax™ harnesses the power of your computer and is the best answer for computerized key cutting.

For more information on CodeMax™ or free demo disks on HPC's software contact your authorized HPC Distributor or HPC direct at 847-671-6280 or [www.hpcworld.com](http://www.hpcworld.com).



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Olympus Lock makes a wide variety of commercial cam and cabinet locks. They don't make the lower security disc tumbler locks, but only pin tumbler style in basically three different categories: small pin tumbler, large pin tumbler and interchangeable core.

The interchangeable core style are designed as cabinet locks with IC housings, which allow the insertion of compatible cores manufactured by a number of different lock companies. Cores are not included with Olympus IC cabinet locks. Although the majority of the IC product line is Best-style (accepts Best brand cores and other brands designed to work with Best-style format housings), a few will work with Corbin/Russwin cores.

Both the small and large pin tumbler locks are rekeyable and easily serviced. The small pin tumbler commercial cabinet locks are designed to be primarily (keyway) compatible with either National Cabinet Lock or Corbin Cabinet Lock (CCL) pin tumbler cam and cabinet locks. The large pin tumbler locks come standard using the Schlage C keyway, but can usually be converted to other commercial keyways.

#### *Small Pin Tumbler Locks*

Photograph 1, shows the two basic square back drawer locks. Part #200DW (left) uses the National Cabinet Lock D4291 keyway and can be coded for four or five pin chambers. It is in the 26D finish. Part #600DW (right) is similar but uses the CCL R1 keyway, and is in the US4 finish. The drawer lock style has a vertical locking bolt (in relation to the keyway). Olympus makes a nearly identical lock called the square back door lock (part numbers 100DR or 500DR), except that the bolt moves side to side. All are available in both keyways and both finishes.

They are easily serviced by removing a set screw (see photograph 2), and pulling out the lock cylinder from the cabinet lock housing. A slide cover at the top of the pin chambers is easily removed when rekeying is desired. It is not necessary to

**Continued on page 56**

1. The two basic square back drawer locks from Olympus Lock.



by Sal  
Dulcamaro,  
CML

# Cabinet Locks

## from Olympus Lock

2. The lock is easily serviced by removing a set screw and pulling out the lock cylinder.

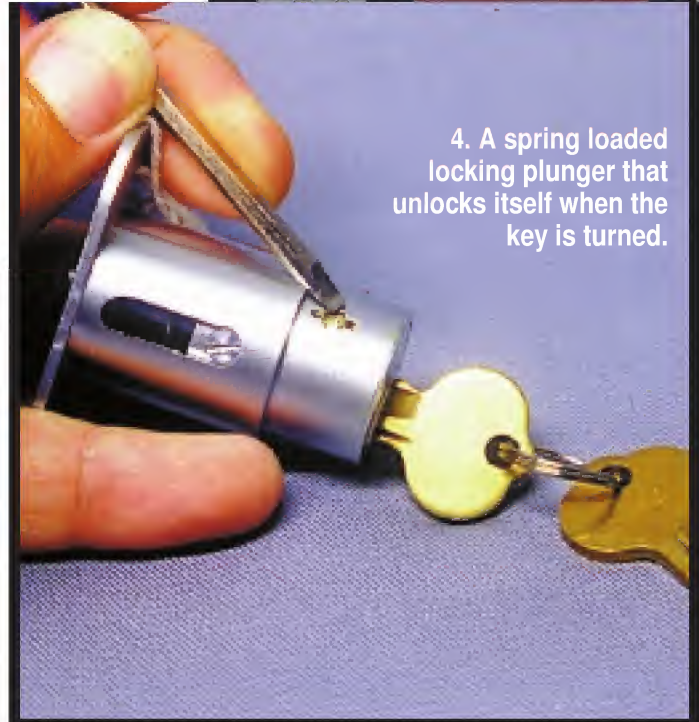






3. Removing a "C" clip at the back of the cylinder makes rekeying a task simple.

Continued from page 54



4. A spring loaded locking plunger that unlocks itself when the key is turned.

remove the cylinder plug to rekey the lock. If you already have a National Cabinet Lock or CCL pinning kit, you can service these locks and integrate them with other cabinet locks of those other brands. If you wish to take out the plug for servicing, removing a "C" clip at the back of the cylinder makes the task simple. *Photograph 3*, shows the #400SD sliding door lock. It uses the CCL R1 keyway. An equivalent lock with the National Cabinet Lock D4291 keyway has the part #300SD. The lock shown is in the 26D finish, but both keyway versions are available in 26D and US4. It has a spring loaded locking plunger that unlocks itself when the key is turned. (*See photograph 4.*) When unlocked, a spring loaded retainer pin is exposed to view. The screwdriver tip is contacting it.

When the retainer pin is pushed in, the lock cylinder will come out (*see photograph 5*) to allow the lock to be serviced.

DCR and DCN series cam locks are shown. (*See photograph 6.*) They can upgrade the pick resistance of a cam lock over that of a typical disc tumbler lock. These small pin tumbler cam locks also have other notable advantages. The one inch diameter lock face helps to cover scarring around the mounting lock hole without the necessity of an oversized spacer washer. The DCR series uses the CCL keyway and the DCN series uses the National Cabinet Lock keyway. Both are available in 26D or US3 finishes. There are four lengths: DCN1, DCN2, DCN3 and DCN4 (or CCL keyway equivalents: DCR1, DCR2, DCR3 and DCR4). They use an interesting mounting plate called a stabilizer (or anti-rotation) plate. It is especially effective in particle board or soft wood drawers, where a typical gripper type mounting plate will tend to lose its grip in the wood allowing the lock to rotate open

without a key.

The stabilizer plates (part #DCNP-500-ARP) can be ordered separately at a list price of \$.80 each. They are included free, however, with all Olympus brand DCN or DCR cam locks.

The DCN/DCR series cam locks are easily serviced by lifting a specially designed "staple" (*see photograph 7*), and then moving the tumbler slide cover to expose the pin chambers. Like the earlier locks, these can also be matched to other small pin tumbler cabinet locks with the National Cabinet Lock or CCL keyways.

The cam mechanism is quite unique. (*See photograph 8.*) Unlike a disc tumbler lock, a pin tumbler lock will not allow key removal after only a quarter turn rotation. The special design of the Olympus cam lock allows the key to rotate a full 360 degrees while the cam only moves a quarter turn when a non-key retaining function is required. Normal direct motion transfer of the cam and key will work when key retaining is required. When the key and cam rotate one quarter turn, the key will not pull, forcing the user to relock the cam lock before removing the key.

#### Large Pin Tumbler Locks

*Photograph 9*, shows two versions of the Olympus Lock large pin tumbler cabinet locks, which are available in both 26D and US3. They come standard with



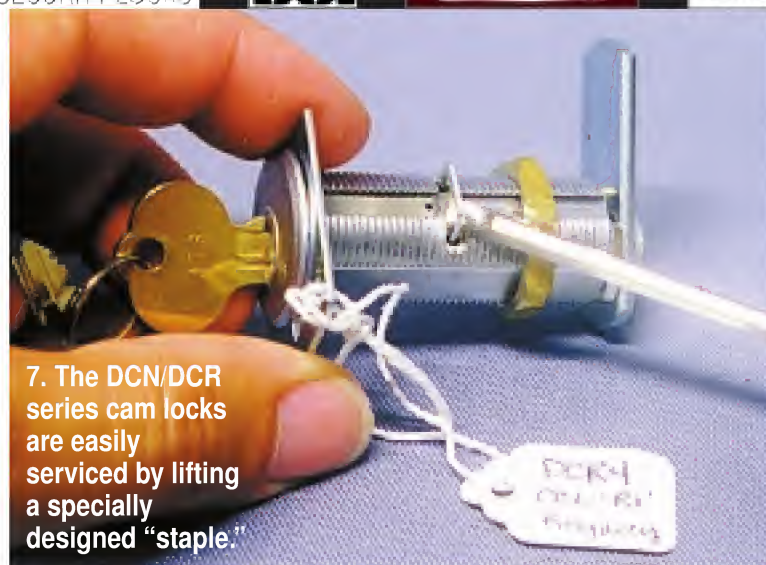
5. When the retainer pin is pushed in, the lock cylinder will come out.



6. The DCR and DCN series cam locks are shown.



7. The DCN/DCR series cam locks are easily serviced by lifting a specially designed "staple."



a Schlage "C" keyway cylinder, although they are also available less cylinder. At the left is the 800SC in US3. It is classified as a drawer lock because the deadlocking bolt moves up and down. The 700SC in 26D (at the right) is considered a door lock because the bolt moves from side to side. They come in two (nose) lengths: 1 1/8 inch and 1 3/8 inch, but also include plastic spacers for use if the door or drawer is too thin.

**T**hese locks are similar in configuration to the small pin tumbler locks of the same category, except for size. These are much larger and will require larger mounting holes. The obvious reason for the size difference is the inclusion of large size commercial style lock cylinders. These are quite useful for matching cabinet locks to standard commercial keys that operate typical door hardware. The cylinders are easily accessed by removing a set screw (see photograph 10), and removing the lock cylinder from the cabinet lock housing.



8. Unlike a disc tumbler lock, a pin tumbler lock will not allow key removal after only a quarter turn rotation.



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9. Two versions of the Olympus Lock large pin tumbler cabinet locks.



If you wish to switch to some commercial keyway (other than the standard Schlage "C"), your best option is probably a LORI 1531 replacement plug (which is also compatible with Schlage original knob lock cylinders). LORI makes nearly a dozen different commercial keyway plugs, which should handle most of your keying requirements. You should be able to rekey this style lock with your typical LAB (or other brand) universal pin kit, or single brand commercial pin kit (using .115 inch diameter pins).

#### Interchangeable Core Locks

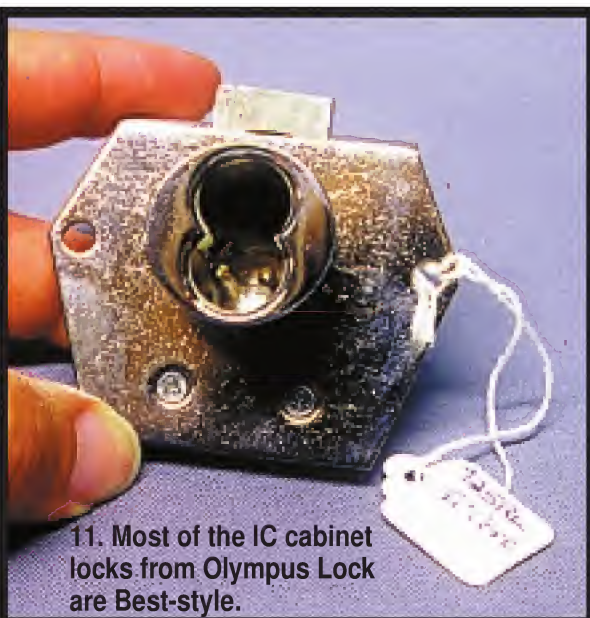
Most of the IC cabinet locks from Olympus Lock are Best-style, with only a few having Corbin/Russwin compatible housings. Photograph 11, shows the 725RL rim latch lock. It is available in the following finishes: US26, 26D, US3 or US4. This acts as a spring latch, but the 725RD (similar in appearance) has a deadbolt. Both latch and deadbolt locks are available handed left, right, vertical up and down. It has the two fixed prongs so you don't need different adapters for six or seven pin Best-style cores.

Part #721DR, (see photograph 12), is similar to the square back deadlocking cabinet locks that are available in both small and large pin versions. The primary difference is that it takes a Best-style IC. It is available in 26D or US3. The original version of this lock required separate adapter tail

10. The cylinders are easily accessed by removing a set screw.



11. Most of the IC cabinet locks from Olympus Lock are Best-style.



12. Similar to the square back deadlocking cabinet locks that are available in both small and large pin versions.







13. Olympus also makes an oversized cam lock that will accept a Best-style core.



14. The cam mechanism is the same as used with the small cam locks.

pieces (of different lengths) for either a six or seven pin Best-style core. It has since been upgraded to use a fixed prong driver, which will allow you to use different length cores without special adapters. If you have the old style of this lock, you can order part #721DR-11 (door style), or #721DW-11 (drawer style) to upgrade the lock. It is called the New 721 Prong Driver. The part, included at no charge with the newer versions of the lock, is available at a (nominal) list price of \$2.67.

Olympus also makes an oversized cam lock that will accept a Best-style core. Shown in photograph 13, (item #720), it will require a larger diameter mounting hole than a typical cam lock. Like the smaller Olympus cam locks, it also includes a stabilizer plate (also larger in size) for secure mounting. While free with the lock, it can be ordered separately (item #720-PL3) with a list price of \$1.25.

The cam mechanism (see photograph 14) is the same as used with the small cam locks. It can be key retaining with a direct motion cam, or non-key retaining where the key will rotate 360 degrees and the cam will only move 90 degrees.

For additional information on these or other Olympus products, contact: Olympus Lock, Inc., 2720 NE 115th Street, Seattle, WA 98125. Phone: 206/362-3290 and 800/525-0954. FAX: 206/362-3569.

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I was called on to open a brilliantly engineered Triton 9600 series ATM cash vending machine. These machines are becoming quite popular in the Northwest Chicago area.

The unit is secured with a LaGard 33E combination lock, which I ran into several problems with. After my escapade, I did, however, figure out a better way to attack these units (in particular this lock) that will cause less damage and a quicker opening.

The privately owned Triton 9600 machine was located at a busy gas station/liquor store right inside the entrance door. The weather outside was hovering at 6 degrees Fahrenheit with a wind chill factor of 17 degrees below zero. There was also 6 inches of snow on the ground that had yet to be plowed. I had to work on the unit fully clothed and gloved, and I still froze.

After the outside plastic cover was opened, I saw that the main lower door that provides access to the inside of the machine was locked with a 33E series electronic lock made by LaGard.

On the right side of the keypad, next to the buttons number 6 and number 9, are two electrical contacts made to receive the ends of an alkaline 9 volt battery. If the internal battery of this lock cannot power the lock, then these two contacts can be incorporated to open the 33E.

If the internal battery is dead, connect a 9 volt battery to the contacts and the red diode on the left side of the dial pad light up. While holding the battery in place, dial the combination and 2 beeps will be heard. While still holding the battery in place, turn the outer dial to the right and the combination lock bolt will withdraw and the unit you are working on will open. If you hold the battery incorrectly, the diode will not light up.

Before working on the 33E, it is easy to determine if there is an old 33E or the new 33E present. On the old style lock, the smaller positive contact is on the top. However, on the new style keypad, the larger negative contact is the uppermost contact. The position of the contact indicates which lock is present.

The reason you need to know whether an old style 33E or new style 33E is present is because the position

**Continued on page 62**

# LaGard E33E Electronic Lock



**1. Wrenching off the dial of a LaGard E33E Electronic lock. Do not try this at home.**



by  
Dale  
Libby,  
CMS



**2. LaGard keypad. Note the two 9 volt battery contacts. Large contact is negative, small contact is positive. This matches the standard 9 volt battery configuration. Plus, large contact up means a new style 33E. Large contact bottom, old style.**



**Continued from page 60**

for drilling either lock is entirely different. On the old style lock, the drill point is for the tip of the solenoid which is near the spindle hole at the center of the lock. This drill point on a vertical down lock (which is the position of the lock on this unit) is 1/4 inch right, 1/2 down from spindle hole center.

The newer model 33E uses a more secure locking system. It incorporates a sidebar wedge in addition to a solenoid. The solenoid locks the spring loaded sidebar wedge in an up position. When the combination is punched in, the solenoid pulls away from the sidebar and allows the bolt to force the sidebar down. When the dial pad is turned to the locked position, the sidebar springs up and blocks the bolt. In the newer lock, the solenoid does not touch the lock bolt as it does in the old style arrangement. It makes for a stronger and more secure punch proof (from the side) system of locking.

The position of the solenoid between the old style lock and the new one was taken from near the center of the lock to a position adjacent to the locking bolt and near one of the sides of the lock case. The drill position for the sidebar wedge for a Vertical Down (VD) lock is now 7/16" left and 1-1/4" down. Compare this to the old style, and you will see that the positions vary greatly.

Once I determined that the lock was of the newer variety, I was all set to work on it. Here is where the trouble started for me. I followed Dave McOmie's directions for opening this lock and ended up adding about 1 hour to my opening and repair time for this unit. Here is the tale of woe.

First, McOmie's drill points for the lock are right on. The method he

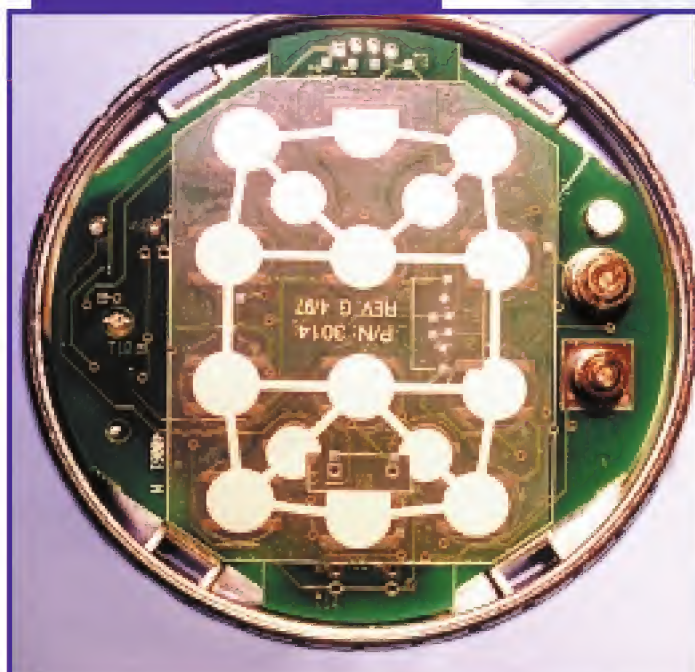
states to remove the dial, for me, however, was not the best procedure.

I concocted an alternative non-damaging way to remove the dial and components, which takes about one minute to accomplish with no damage to the combination lock, the brass channeled spindle, or the special dial base plate mounting screws.



**3. Pry off lattice cover. Clips located at 3, #, and 1 position.**

**4. After removing rubber number pad, PC Board is shown.**



**5. Mounting screws are now seen with wire out of center of brass spindle.**





## Keypad Removal

In the McOmie Files (available to members of the National Safeman's Organization) it states to remove the keypad with a pipe wrench by turning the dial to the 11:00 o'clock position. The dial normally turns only from the 12:00 o'clock to the 3:00 position when the lock is open. The combination lock, when installed, keeps the dial from turning to the 11:00 position. There are two large holes to access two flat screws to allow the dial to be mounted. After installing the lock, the dial cannot be easily rotated so that it will come off.

*Photograph 1*, shows me about to wrench the key pad and dial off the Triton 9600 ATM. One gentle flip Counter Clock Wise (CCW) of the pipe wrench not only removed the keypad, it caused me grief. Perhaps I am stronger than I think, but I did a lot of damage with a simple little flick of my wrist.

The first thing I noticed was that both mounting screws, the ones that hold on the dial and ring were sheared off below the surface of the door. This would require drilling and tapping to make the old holes usable for the new lock. This added about 20 minutes to the installation time.

Next, the 33E uses a brass square spindle with a channel cut in one side. This channel is for the wire from the keypad to run through the safe door to the inside of the safe. A small black connector at the end easily passes the 5/16 inch spindle hole and connects to the lock. The length of this spindle is very critical for the lock to work correctly. When retro fitting or replacing a 33E lock, it would be nice and easy to reuse this same spindle, for it is already the proper length. By applying torque to the dial pad, I bent this brass square channel and buggered one end of it. I could not reuse it. I had to cut another one to a specific length to get the new lock working. About 10 minutes of extra work here.

The last damage was to the combination lock itself. By possibly over tightening the dial, I had sheared off the protrusion on the back of the dial spindle acceptor, and the circular cam just spun round and round. If I had not sheared this off, I could have used the old spindle and a pair of pliers to withdraw the bolt after drilling off the sidebar wedge that

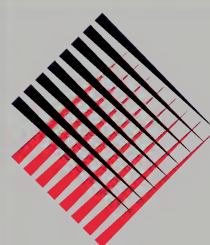
holds the combination lock bolt locked. Instead, I had to drill another hole to push the bolt into the lock after the wedge was destroyed.

This was the worst possible scenario. There is an easier way to remove the dial pad (without destroying it) and there will be no damage to the safe door or the combination lock. Look at *photograph 2*. This is the keypad of the ATM. By placement of the large contact (negative), we see that this is a new style 33E LaGard lock.

The first step is to pry off the

plastic lattice that covers the rubber keypad. This is similar to the LaGard spy proof dial. The lattice snaps into the dial ring. There are four posts around the edge that hold the lattice in place. They are located across from the number 1 and 3 keys, and the star and pound keys. Insert a small screw driver or a multi-tool underneath the lattice anywhere and pull. It will pop off and you will see something like *photograph 3*. Discard the part.

The rubber numbered keypad easily falls off the dial and exposes the printed circuit (PC) board. (See *photograph 4*.) This is only held in



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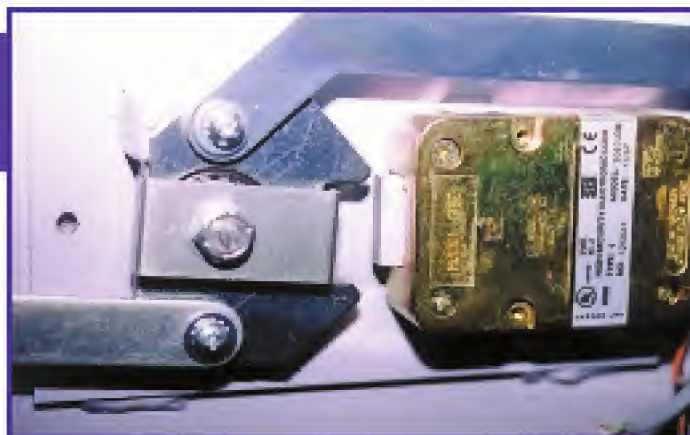
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7. Lock mounted HR (Horizontal Right). Bolt fits into cutout on back of handle cam.

6. Wire removed showing cut out in spindle. Unscrew the two large headed screws to remove dial ring and base plate. Note brass channeled spindle in center of dial ring.



place by the wire from the inside of the safe. Pull this board out of the way. The wire may pull out from the inside of the safe, if not you may have to clip it.

Photograph 5, is what you will see after removing the PC board. The two large headed special 8/32 screws can now be

removed safely with a flat head screwdriver. The wire has been removed in photograph 6, to show the brass channel and slot that the wire goes through.

In photograph 7, we see the lock mounted HR (Horizontal Right). The bolt has been partially pulled back showing the cut-out in the handle cam that the lock rests in when locked. Note the absence of an external relocking device. There is none. Hence my future quick opening method.

The lock that I opened can be seen in photograph 8. It is labeled a High



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Security Electronic Lock. The lock body is secured to the safe door with only 3-1/4 inch through bolts. The back cover of the lock is held on with the silver taped LaGard label and the mounting screws. The other two case screws are strictly for mounting any number of case relockers or other relocking devices. In practice, the back cover should never be removed. There is nothing to service under this cover.

*Photograph 9*, shows this cover removed. All the electronics are clear doped. There is no repair for the combination lock in the field. The internal relocking wire for this lock is activated when the plate the electronics are attached to is punched, not the back cover.

*Photograph 10*, shows the combination lock in the locked position. My hole wandered a bit off, so I did not drill through the sidebar wedge, but I drilled enough of the solenoid off to allow the wedge to tip and the lock to open. Again, the wedge is spring loaded. The relock

**8. Rear view of 33E High Security Electronic Lock. Bolt is partially pushed in.**



wire is just visible above the right end of the solenoid. A better picture of the relock channel is shown in *photograph 11*.

With the bolt removed, the "L" channel for the end of the relock wire can be seen just above the center of what is left of the solenoid. Also, the round disc to the right is what the end of the brass channel spindle fits into. By over tightening the dial pad, the

bolt withdrawing stud was sheared off. It can be seen resting at 6:00 o'clock. There is not much to it.

If I had not sheared it off, I could have used the spindle hole to withdraw the bolt after drilling out the sidebar wedge. I had to drill another hole to push the bolt gently into the lock body.

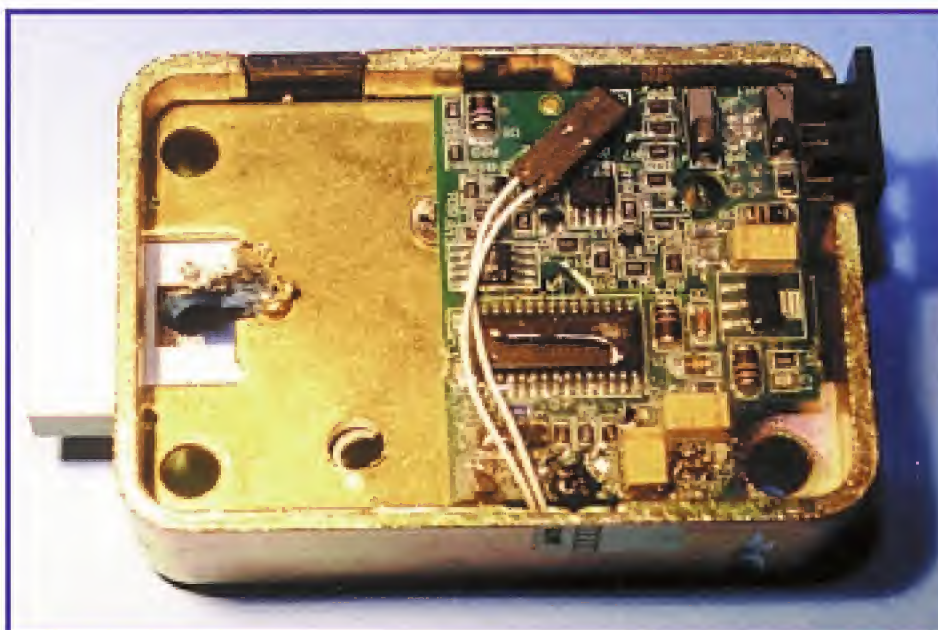
I know, you are dying to hear what the original problem was. The owner of



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**9. Cover removed showing electronics which are "clear doped". If the lock is punched, the back cover does not set off relocker. the cover that is shown here just below the PC board activates the internal relock trigger wire if the spindle is punched.**

**10. End of solenoid is drilled off. Pointer shows blocking spring loaded wedge. Just above solenoid is relock wire.**

the gas station changed the combination to the lock five times in two days. He was so confused and so paranoid about his employees finding out the combination that he got confused and could not remember the correct numbers. This cost him, and the ATM company some good bucks. With the popularity of these units increasing, our service will become more needed.

The combination of the 33E is accomplished by the usual LaGard electronic lock changing sequence, which I remember as the "0-1-2" way of changing basic combination.

1. Enter 6 zeros, and get a double chirp from the lock.

2. Enter the existing combination once and get double chirps.

3. Enter the new combination twice, getting double chirps after each 6 digit entry. The combination is changed.

If, for some reason, the changing sequence is incorrect, the original combination should work. For some unknown reason, when the customer was changing the combination, he did it with the door closed and locked. Hence, the problem.

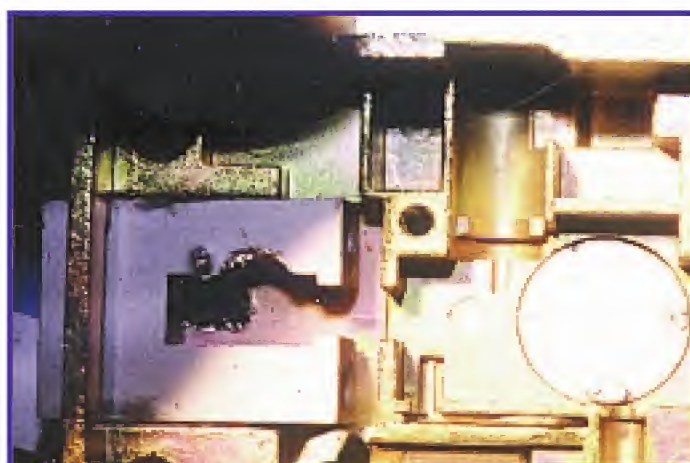
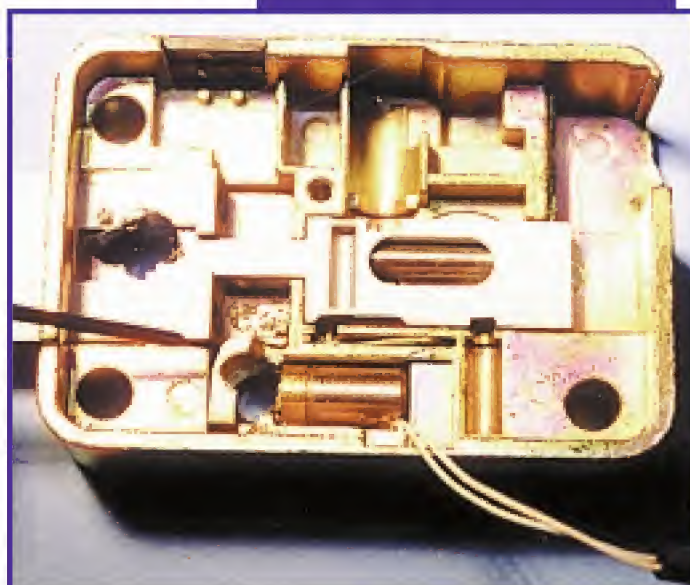
Another interesting feature of the Triton ATM is an enclosed telephone with a dedicated line to the ATM help desk. After opening the upper part of the cabinet there is a small dedicated phone. Just punch the red button and you will be connected to a help operator, which eventually got me to the job. They supplied a new 33E sealed lock for replacement, with a

diagram of the inside of the safe before I opened it.

In the future, if I have to open one of these units, I will drill 2-1/2 inches to the right of the spindle hole (after removing the dial and key pad by my method) and drill through the 1/2 inch of soft steel to reach the combination bolt. I will gently punch the bolt out of the way of the handle cam and open the unit.

I will then repair the hole with a short stainless steel carriage bolt and stud compound, both threaded and nutted. My repair will be stronger than the original steel. No one can see the repair, for there is a large plastic door that covers the inner handle and keypad for the 33E lock. Or, I will drill under the keypad. Depends on how much of a show the customer wants.

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**11. Relock wire clearly shown here above solenoid. Also, the position of the wedge when bolt opens. When closed, wedge pops up and blocks the retraction of the bolt. Also, here is a shot of the spindle cam. Protrusion at 3:00 o'clock shown here has been sheared off.**





**Your Trail Guide —  
Steve Gebbia, CML**

## TRILOGY



**WITH AUDIT TRAIL**

**Y**ou may have heard about the newest Trilogy lock from Alarm Lock — the T3. You probably even know that the T3 has audit trail capability built into it. But there is much more to the newest incarnation of the Trilogy than just another lock with an audit trail. (See photograph 1.)

The T3 is a complete access control system. It has a real-time clock and most of the features that you'd expect to find on hard-wired systems. It even brings a few twists of its own to the game.

**1. There is much more to the newest incarnation of the Trilogy than just another lock with an audit trail.**



### **Codes, Codes, and More Codes**

Those familiar with the earlier versions of the Trilogy will find a few surprises in store for them. The most dramatic change is in the organization of the User Codes. While the hierarchy remains basically unchanged — there is still a Master Code, Intermediate level programming codes, and basic user codes — this structure is much more flexible. And there is a whole lot more of them — up to 300 codes are available.

Each code can be assigned a program level ability and a group association. The program level ability determines what, if any, programming functions can be accessed by that code. The group association determines which user group, if any, that code will belong to.

### **Program Level Ability**

There are 4 levels of programming access available. Because any code may be assigned any one or more level(s) of program level ability, individual users may be allowed to program certain functions as required by the particular needs of the end user.

This makes the T3 extremely versatile.

Program Level 1, allows the Audit Trail and Clock settings to be printed. No other programming may be accessed. This allows a manager to assign a subordinate the task of retrieving the audit trail information.

Program Level 2, allows the user to control the daily flow of system users. This includes the ability to Enable or Disable Users, Enable or Disable Passage mode, and Enable or Disable User Groups.

Program Level 3, is the most powerful. It controls most of the basic system programming abilities. A user assigned program level 3 ability may: Upload or Download PC data, Add or Delete User codes; Add or Delete User Group Associations; Change User Program Level ability; Set the date, time of day, and day of the week; and Add or Erase Schedules. This User becomes, in effect, the daily system administrator. (There are a few senior functions not accessible at this level that are reserved for the Master User).

Program Level 4, allows access to certain installation related functions only. This allows a subordinate to install and test the T3 without access to higher programming functions.

There is a fifth level of program access — that of Master User related



functions. These high level functions are reserved for the control of the Master User only: Change Master Code, Enable or Disable Total User Lockout, Erase all Users, Erase all programming.

The ability to customize programming access to the daily needs of the end user is one of the most powerful features of the T3, and what sets it apart from many other access control systems.

### Group Associations

There are 4 User Groups to which users codes may be associated. In earlier Trilogy locks, this association was preset and unalterable — 3 groups of 5 users each. No longer are you restricted to this grouping of users. Each User Code may be associated with any number of groups — 1, 2, 3, 4 or even with none.

The group

association is primarily used in situations where certain users (a user group) will be allowed access only at certain times. This is accomplished by associating these User Codes with a particular group and then using the Enable/Disable Group program function.

Remember that if a User is associated with more than one group, all associated groups would have to be disabled to prevent access (by Disable Group function). An alternative would be to use the Disable User function to disable only that particular User code.

That's not all there is to the group association function of the T3. Group 1 and Group 4 codes have a special relationship in this system. Certain Manager initiated functions are only available to Codes associated with Group 1. And these functions have direct control over the User Codes associated with Group 4. This, in effect, makes group 4 subordinate to group 1 — if so desired. (If these features are not used, then group 1 has no special controls over group 4).

There are several "First Manager In" initiated functions available to the



**2. Programming of the T3 can also be accomplished with a laptop computer.**



**3. The interface cable connects to a 9 pin serial port on your notebook PC.**



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T3. One of these is the ability to Enable other users. In particular, when this function is programmed, any Group 1 User will Enable Group 4. A time window is programmed, during this window a valid User Code associated with Group 1 must be entered. Once this code is accepted, all Group 4 User Codes are enabled.

Here's an example: a time window is programmed to open at 6:30 a.m. and close at 7:45 a.m.. At 7:44 a.m. a Group 1 user enters his code. At this point all Group 4 User Codes are now enabled. If no Group 1 user had entered, Group 4 codes would not have been activated (unless they are enabled by other programmed functions — such as a scheduled event). Note that once Group 4 has been activated by this function it will remain enabled until disabled by another programmed event (scheduled Disable Group or manual Disable at the keypad).

So, how do you decide to which group you should associate a particular user? That will really depend on the end user's particular needs. For large systems with many users and varying time schedules you may want to make a list of the Users and the times at which each should be allowed or denied access. Those users with the same access needs would be assigned to the same group.

For most systems, however, that won't be necessary. The T3 has certain default settings that are appropriate for many of the systems you will install. In *illustration 1* you will find the default Group Associations and Program Level Abilities for each User Code.

Remember that these are just suggested settings and associations. You may easily change the Group Association or Program Level Ability of any user (except for the Master Code). As in previous Trilogy locks, the Master Code does not grant access.

There are 2 special use codes not discussed yet. These are codes 299 and 300. User Code 299 is reserved for Audit functions. This code does not allow access at any time. This is best used when allowed Program Level 1 only, but may also be assigned Program Level 3 (for PC programming of the lock).

The Service Code is a one-time use code. It allows one-time access and then automatically deletes itself from memory. User Code 300 may only be used as a Service Code.

One thing to keep in mind about Program Levels is that they are not hierarchical. In other words, assigning a User Program Level 1 and 3 does not automatically grant that User Program Level 2 ability.

#### **Programming the Trilogy T3**

There are 3 different methods of programming the T3. For smaller systems, programming at the keypad is the way to go. Programming protocol is similar to earlier models. You must first enter program mode by entering the Master Code (or appropriate Manager Code). Then a command code is entered followed by the appropriate User code or other parameter. The example below shows the steps to program a new Master Code (which must be done before any other programming):

| User Type             | User Number | Default Group Association | Default Keypad Program Level |
|-----------------------|-------------|---------------------------|------------------------------|
| Master Code           | 1           | None                      | 1,2,3,4, Master              |
| Manager Codes         | 2-6         | None                      | 1,2,3                        |
| Supervisor            | 7-11        | None                      | 1,2                          |
| Basic User Codes      | 12-50       | None                      | None                         |
| User Codes Group 1    | 51-100      | 1                         | None                         |
| User Codes Group 2    | 101-150     | 2                         | None                         |
| User Codes Group 3    | 151-200     | 3                         | None                         |
| User Codes Group 4    | 201-250     | 4                         | None                         |
| Basic User Codes      | 251-298     | None                      | None                         |
| Non-Pass Code (Audit) | 299         | None                      | None                         |
| Service Code          | 300         | None                      | None                         |

**Illustration 1.**



Enter: AL - 1-2-3-4-5-6 (existing Master Code) AL (you are now in program mode)

Enter: AL - 1 - AL 5-1-2-3-6-3 (new Master Code) AL 5-1-2-3-6-3 (confirm new code) (the Master Code is the only one that needs to be entered twice).

**To program a new User code:**

Enter program mode: AL - 5-1-2-3-6-3 AL . Add User 27 (function 2) AL - 2 - AL - 2-7 - AL 3-4-6-1 - \*

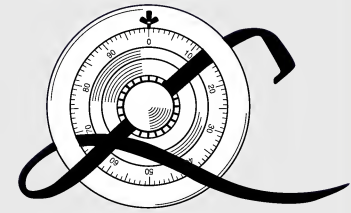
**To exit program mode:** Hold any key for 3 seconds. User 27 is now programmed with code 3641. (Program mode will timeout after 3 minutes if no key is pressed).

All other program functions may be programmed at the keypad in a similar manner. The list below identifies each program function.

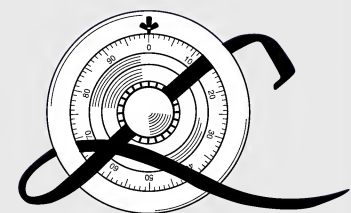
**Program Function Description:**

- 1 Change Master Code
- 2 Add, Change, or Delete User Codes (User 2-300)
- 3 Enable User (by User number)
- 4 Disable User (by User number)
- 5 Enable User with timeout (user code is disabled after time expires)
- 6 Enable Total User Lockout (only Master code will operate)
- 7 Disable Total User Lockout (must be used to re-enable users after function 6 is used)
- 8 Change User Program Level ability
- 9 Enable User 300 — Service Code
- 10 Erase All Users — except Master Code
- 11 (Reserved for internal use by Alarm Lock)
- 12 Clear all Schedules and Timeout functions
- 13 Clear all Timeout functions
- 14 Disable Group 1
- 15 Disable Group 2
- 16 Disable Group 3
- 17 Disable Group 4
- 18 Disable All Groups
- 19 Enable Group 1
- 20 Enable Group 2
- 21 Enable Group 3
- 22 Enable Group 4
- 23 Enable All Groups
- 24 (Reserved)
- 25 Timed Disable Group 1 — up to 999 hours for all timed functions
- 26 Timed Disable Group 2
- 27 Timed Disable Group 3
- 28 Timed Disable Group 4

- 29 Timed Disable All Groups
- 30 Timed Enable Group 1 — only 4 timed functions may be programmed at anyone time
- 31 Timed Enable Group 2
- 32 Timed Enable Group 3
- 33 Timed Enable Group 4
- 34 Timed Enable All Groups
- 35 Add or Delete Group Association
- 36 (Reserved)
- 37 (Reserved)
- 38 Set Date — use this format: MMDDYY
- 39 Set Time — use 24 hour format: 8:25 p.m. becomes: 2025
- 40 Set Day of the Week — 1 for Sunday, 7 for Saturday
- 41 Enable Daylight Savings (when enabled will automatically correct for daylight savings)
- 42 Disable Daylight Savings Time (enabled at factory as default)
- 43 Speed up clock (to adjust clock if it is losing time) — in seconds per day
- 44 Slow down clock (if it is gaining time each day)
- 45 Enable Passage mode (scheduled events will override)
- 46 Disable Passage mode (schedule will override)
- 47 Timed Passage mode — will unlock for set period of time (1-999 hours)
- 48 Enable Passage mode — scheduled events will not override
- 49 Disable Passage mode (used with function 48 only)
- 50 Return to normal Passage mode (schedule will override) used with functions 48 & 49
- 51 Set Pass time at 5 seconds — T3 will unlock for 5 seconds when valid code is entered
- 52 Set Pass time at 10 seconds
- 53 Set Pass time at 15 seconds
- 54 (Reserved)
- 55 Print Audit trail (used with optional infrared printer #AL 3000)
- 56 Print User code list (with AL3000 printer)
- 57 Print Clock settings and software version (with AL3000 printer)
- 58 Upload or Download PC data (used with DL Windows software and AL-PCI cable)
- 59 Assign Door number to optional AL-DTM data transfer module
- 60 Set number of wrong attempts before lockout (1-9 attempts)
- 61 Set Lockout time (for wrong attempts) 1-60 seconds



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- 62 (Reserved)
- 63 (Reserved)
- 64 Disable Remote Input (prevents REX input from operating T3)
- 65 Enable Remote Input (enable is factory default setting)
- 66 Ambush Code — 2 digit code entered before valid user code trips relay (for 2 seconds) connected to terminals 5 & 6 on T3 lock. (to activate remote alarm)
- 67 Add Relay function — relay will activate for 2 seconds when selected event(s) occur
  - 1 - Remote input while enabled
  - 2 - Remote input while disabled
  - 3 - Failed entry attempt
  - 4 - Disabled user code entered
  - 5 - Authorized entry
  - 6 - Function 90 activated
  - 7 - Locked by schedule
  - 8 - Unlocked by schedule
  - 9 - Keypad lockout
  - 10 - Ambush function activated
  - 11 - Any key press

This function allows real-time monitoring of lock operation when a remote sounder is connected to the relay terminals on the T3 —

- 68 Delete all relay functions
- 69 Enable \* key as Enter — requires that \* be pressed after each User code (allows sub-set codes to be used — 123\* will be recognized as different than 1234\*)
- 70 Disable \* key as Enter — 123 and 1234 will be seen as the same code since the T3 unlocks as soon as it recognizes a valid code
- 71 (reserved)
- 72 Enable Passage mode by schedule
- 73 Disable Passage mode by schedule
- 74 Enable Group 1 by schedule — example: AL-74-AL-(day)-AL-(time) .... day 1 is Sunday, day 7 is Saturday, day 0 is all days
- 75 Enable Group 2 by schedule
- 76 Enable Group 3 by schedule
- 77 Enable Group 4 by schedule
- 78 Enable All Groups by schedule
- 79 Disable Group 1 by schedule
- 80 Disable Group 2 by schedule
- 81 Disable Group 3 by schedule
- 82 Disable Group 4 by schedule
- 83 Disable All Groups by schedule
- 84 Business Quick schedule — enables programmed group from 7 a.m. to 5 p.m. M-F
- 85 Day Quick Schedule — enables

Group from 7 a.m. to 5 p.m. all days

- 86 Evening Quick Schedule — enables Group from 3 p.m. to 11 p.m. all days
- 87 Night Quick Schedule — enables Group from 11 p.m. to 9 a.m. all days
- 88 Passage mode by schedule — open time window .... Group 1 activated .... when a valid Group 1 code is entered during the programmed time window, passage mode is enabled
- 89 Passage mode by schedule — close time window (used with function 88)
- 90 Scheduled Relay activation — open time window
- 91 Scheduled Relay activation — close time window (with function 90) — Group 1 activated — sets window open/ close during which any valid Group 1 code will activate relay for 2 seconds
- 92 Scheduled Enable Group 4 — open time window — Group 1 activated
- 93 Scheduled Enable Group 4 — close time window (with function 92) — a valid Group 1 code entered during the time window enables Group 4 (First Manager In)
- 94-98 (reserved)
- 99 Clear All Programming and History Log

While keypad programming can be used for systems of any size — without losing the ability to use any of the functions — it can get rather intense for larger systems. That is why Alarm Lock presents you with two additional ways to program the T3.

The first, and most versatile, is by laptop PC. (See photograph 2.) This requires the DL-Windows software and the AL-PCI cable. The software makes all of the programming functions much easier. Information is entered in the User List, the Time Zone List, and the Scheduled Events list. This is then compiled into a comprehensive Schedule of events that shows who has access at what times. Everything you would want to see as system administrator.

The interface cable connects to a 9 pin serial port on your notebook PC. (See photograph 3.) The communication cable plugs into the serial adapter with a standard data communication connector. At the other end, the cable plugs into the terminals on the face of the T3. (See photograph 4.) Beware — this connection is polarized. Make sure you plug it in the correct way. There is a locator tab (see photograph 5) to help you orient it properly, but it would be



4. The communication cable plugs into the serial adapter, the other end plugs into the terminals on the face of the T3.



5. There is a locator tab to help you position the plug properly.



6. Proper orientation of the communication cable when plugged into the T3.



easier to see if the connector were color coded — or designed so that it will only go in the proper way. (See photograph 6.)

Another method of programming is designed for end users with multiple T3's. Once again the DL-Windows software is used. This time, it is installed on a desktop PC. Information is transferred from the T3 locks to the PC via the AL-DTM data transfer module. This hand-held device plugs into each T3 (using a special cable) and to the PC via a 9 pin serial connector. (an adapter must be used if your PC has a 25 pin connector). Operational programming using this method is the same as with a laptop PC except that the information is first sent to the DTM and then transferred to the lock.

#### **Audit Trail**

Aside from downloading the audit trail log information to a laptop PC of desktop PC, a hand held printer (ALIR1) is also available. (See photograph 7.) This allows for convenient mobile auditing of any T3 lock, producing a printable log of the transaction.

#### **Installation**

The Trilogy T3 easily replaces existing cylindrical locks. One additional hole is needed to allow the ribbon cable

and motor wire to pass through the door — as well as holes for the mounting bolts. A 2 3/4" backset, UL listed, fire-rated latch (3 hours) is standard (1/2" throw). The T3 is also non-handed.

The T3 is available in a standard pin tumbler keyway (Schlage C) — 6 pin, keyed 5 — or in Best style interchangeable core.

The only unusual or difficult part of the installation is completely optional. If you choose to use the remote release or any of the relay functions, then you will need to bring appropriate wiring through the door to and into the T3.

Alarm Lock has a real winner with the newest Trilogy. The T3 bundles all the most sought-after features of hard-wired access control systems into an easy-to-install, easy-to-program stand-alone lockset. So, the next time you are asked to provide a non-keyed access control lock, do yourself — and your customer — a favor and take a good long



**7. Aside from downloading the audit trail log information to a laptop PC or desktop PC, a hand held printer**

look at the new Alarm Lock Trilogy T3. It just might be exactly what your customer is looking for.

For more information call (516) 789-4871 or (800) ALA-LOCK. **TNL**

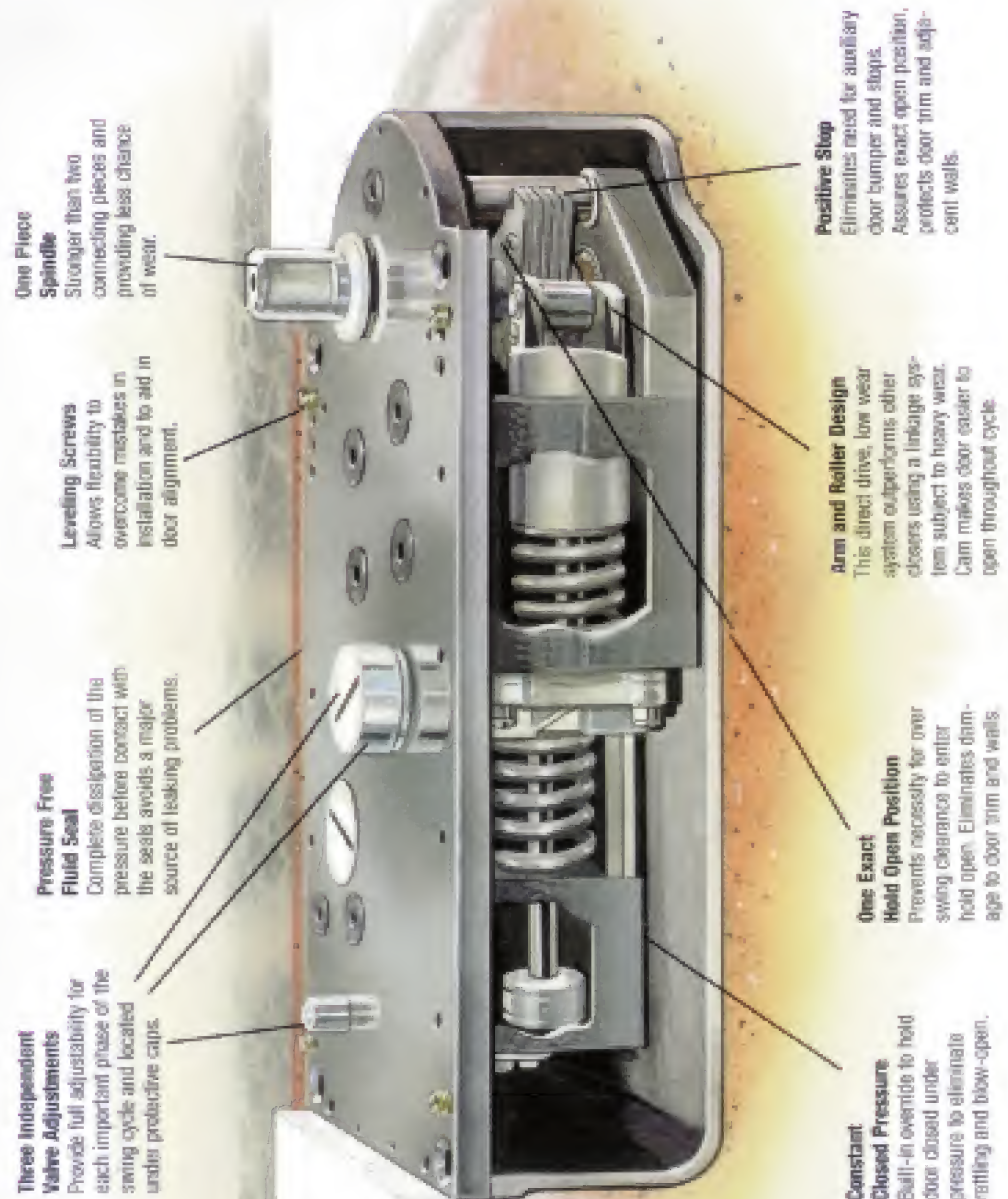
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# EXPLODED VIEW



**Selector Chart 2000 Series**

| Opening Door Size | 105"HHO | 105"HHO | 90"HHO | 90"HHO |
|-------------------|---------|---------|--------|--------|
| Up to 3'-0"       | 2600D   | 2610D   | 2620D  | 2630D  |
| Up to 3'-6"       | 2640D   | 2610E   | 2620E  | 2630E  |
| Up to 4'-0"       | 2600F   | 2610F   | 2620F  | 2630F  |

For wood doors order #0231 spreader.

**Selector Chart 2500 Series**

| Opening Door Size | 105"HHO | 105"HHO | 90"HHO | 90"HHO |
|-------------------|---------|---------|--------|--------|
| Up to 3'-0"       | 2500D   | 2510D   | 2520D  | 2530D  |
| Up to 3'-6"       | 2500E   | 2510E   | 2520E  | 2530E  |
| Up to 4'-0"       | 2500F   | 2510F   | 2520F  | 2530F  |

**Selector Chart 3500 Series**

| Opening Door Size | 105"HHO | 105"HHO | 90"HHO | 90"HHO |
|-------------------|---------|---------|--------|--------|
| Up to 3'-0"       | 3500D   | 3510D   | 3520D  | 3530D  |
| Up to 3'-6"       | 3500E   | 3510E   | 3520E  | 3530E  |
| Up to 4'-0"       | 3500F   | 3510F   | 3520F  | 3530F  |



## Door Closer – Floor Mounted, Heavy Duty

### Operational Features

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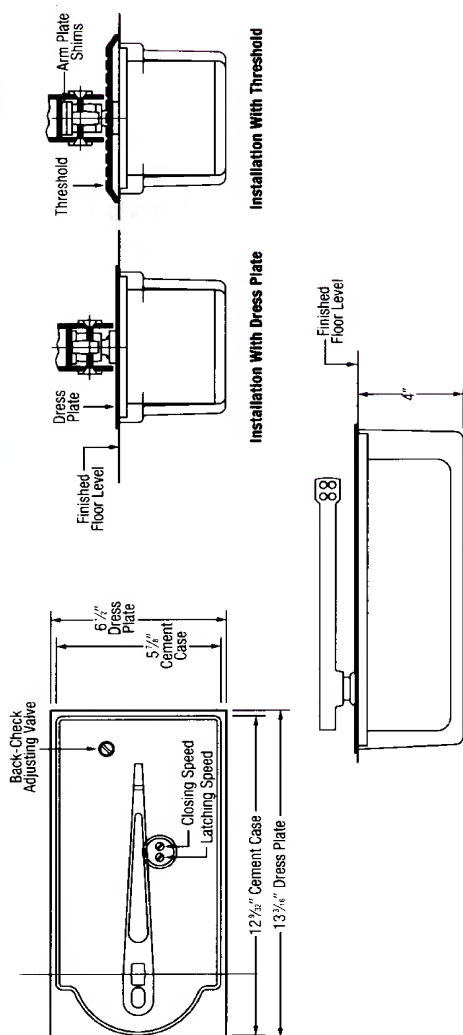
- Opening swing of either 90° or 105°, hold open or non-hold open.
- Mounting hardware for offset hung (3/4" or 1-1/2") or center hung doors.
- One way traffic (single acting) or two way traffic (double acting) capacity.
- Mounting hardware and fasteners for aluminum, hollow metal, wood and glass doors.
- Dress plates and other finished hardware in bronze or aluminum material and in a wide range of finishes. (Including US3, 10, 10B, 26D & 32D).
- Two closing speed adjustments and adjustable spring tension.
- Custom length closer spindle for special recessed applications under carpeting, terrazzo, etc.

### A special note on Hydra-Cushion Floor Controls

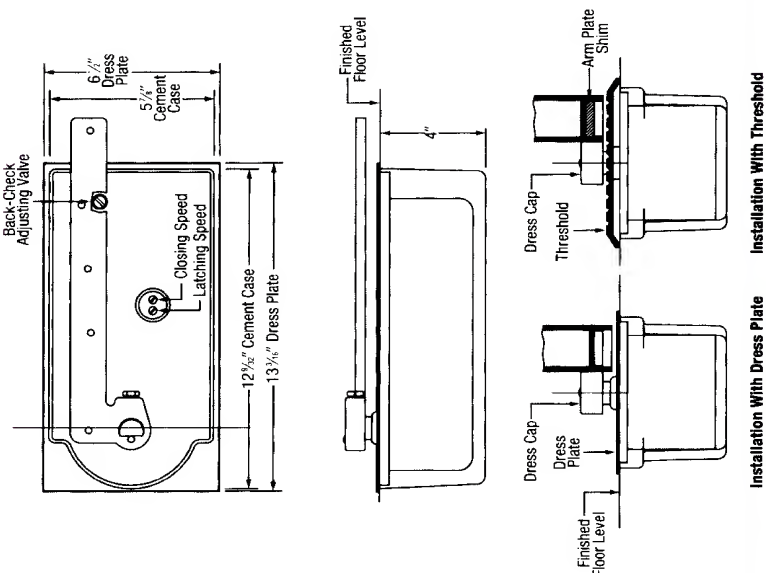
For those truly heavy duty situations Hydra-Cushion offers these important features:

- Adjustable, hydraulic cushioned backstop to reduce the shock of opening.
- Three distinct spring sizes for a more specific fit to different door sizes, types and conditions.
- All Hydra-Cushions carry an extended warranty against defects in material or workmanship.
- Hydra-Cushion Spring Sizes:  
D Spring – up to 3'-0"  
E Spring – up to 3'-6"  
F Spring – up to 4'-6"

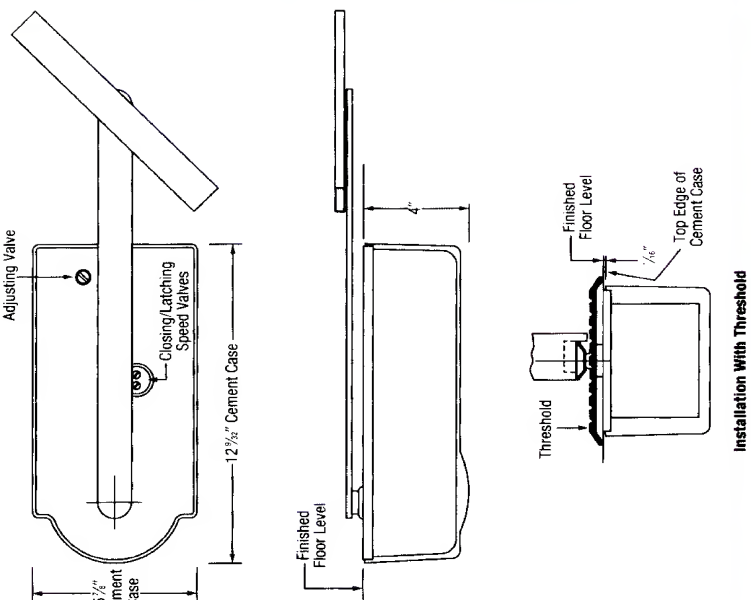
### 2600 Series



### 2500 Series



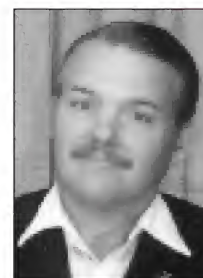
### 3600 Series





# BEGINNER'S CORNER

## File Cabinet Locking Bars



by  
**Jim  
Langston**

In this article, I will be covering three different locking bars for filing cabinets. They are McDowell-Craig, Multi-Lock, and Ilco Unican.

### The McDowell-Craig Bar

This first bar, the McDowell-Craig Bar, is a self contained swing away locking bar. (See photograph 1.) The bar remains permanently affixed to the file cabinet, whether the file is in use or not. The bar is made of heavy duty cold rolled steel which gives the

Swing-A-Way Locking Bar strength where it is needed.

McDowell-Craig bars are zinc plated to prohibit corrosion and to permit their use with any color combination. Red signal tape is attached to the backside of each bar to prevent scratches on painted surfaces. The red tape is also used as an indication that the bar is in the open position.

In photograph 2, I am positioning the locking bar and marking where

the holes need to be drilled. You will use a 1/8 inch drill bit to drill these holes. The bar installed on a file cabinet is shown in photograph 3. Note the place where the pencil is pointing. This is where the padlock goes which locks the bar. A padlock is not included with the McDowell-Craig bar.

There are five McDowell-Craig Swing-A-Way Bar models:

Model SA-218 18 3/4" Swing-A-Way



**1. The McDowell-Craig Bar is a self contained swing away locking bar.**



**2. Positioning the locking bar and marking where the holes need to be drilled.**



**3. The completed installation on a file cabinet.**



**4. The Multi-Lock Bar features an outside bar that is coupled with a red inner slide bar that interlocks with a specially designed locking lug.**



Bar for Regular Desk Pedestal

Model SA-200 23 1/2" Swing-A-Way  
Bar for 2 Drawer File Cabinet

Model SA-300 33" Swing-A-Way  
Bar for 3 Drawer File Cabinet

Model SA-400 49 1/2" Swing-A-Way  
Bar for 4 Drawer File Cabinet

Model SA-500 55" Swing-A-Way  
Bar for 5 Drawer File Cabinet

### The Multi-Lock Bar

The Multi-Lock Bar is shown in *photograph 4*. The outside bar is coupled with a red inner slide bar that interlocks with a specially designed locking lug at every drawer opening when in the locked position. The multiple locking system eliminates torque found in devices that lock at the top and bottom only. In *photograph 5*, I am marking where the mounting holes will need to be drilled. Use a 1/8 inch bit to drill the holes as shown in *photograph 6*. Then attach the bar with the screws that are furnished with the bar. When installed, lock at the top of the bar using a padlock of your choice.

A slight upward motion of the red inner slide bar releases all lock points. The built-in spring-loaded hinge will swing the bar open.



5. I am marking where the mounting holes will need to be drilled.

This bar meets every security requirement of the Department of Defense's (D.O.D) Industrial Manual for safeguarding classified information. It is available in sizes to fit one through five drawer file cabinets.

### The Ilco Unican Bar

The Ilco Unican Bar is a very good locking bar. The File Guard, as Unican calls it, is the newest innovation in locking bar security. It offers strength, security, and simplicity. With this bar, you can turn any file cabinet into a security cabinet. This bar meets the D.O.D.'s Requirements for Storage of Secret and Classified Material.



6. Use a 1/8 inch bit to drill the holes.

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HIGH SECURITY LOCKS

**The market leader  
in locking systems for security,  
safety, and control.**

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**7. The Ilco Pushbutton Lock and mounting bolts are shown.**

The Pushbutton Lock (PBL) and mounting bolts are shown in photograph 7. The top bolt has a hole in it for the PBL to fit into and the bottom bolt has a slot for the bottom of the bar to slide into. Photograph 8, shows the slot at the bottom of the bar.

The top bolt will need to be positioned as shown in photograph 9. After you drill a 1/4 inch hole, you will need to open the top drawer, insert the bolt into the hole, and secure it



**8. The top bolt has a hole in it for the PBL to fit into and the bottom bolt has a slot for the bottom of the bar to slide into.**

with the nut and lock washer provided.

At the bottom of the file cabinet, drill a 1/4 inch hole in line with the top hold. (See photograph 10.) In order to get to the back of the hole to secure the bolt with the nut and lock washer, you will have to tilt the cabinet back.

The installed bar is shown in photograph 11.

Operation of the File Guard is easy and straight forward. Simply punch in the opening code, turn the T-turn and remove the bar. Having a lock built directly on the locking bar is very convenient.

The Unican File Guard bars are available in four styles and in two finishes, Almond and Black. The PBL File Guard is available for 2 drawer, 4 drawer, and 5 drawer cabinets. The Standard File Guard, the Self-Storing File Guard and the File Guard with a Built-in-Lock are available for 2 to 5 drawer cabinets.

You will need a padlock for the Standard and Self-Storing File Guards. A built-in 5 pin Schlage "C" or Weiser Keyway is an option on the File Guard with Built-in-Lock and can be keyed alike upon request.

Whether you choose a PBL, standard, self-storing, or built-in lock style, the File Guard provides dependable security and quick, easy, convenient day to day use while



**9. The top bolt will need to be positioned as shown.**



**10. At the bottom of the file cabinet, drill a 1/4 inch hole in line with the top hold.**



**11. The completed installed bar is shown.**

ensuring optimum security for confidential documents.

Well, that's it until next month. Happy Locksmithing.

#### POINT TO PONDER:

Sometimes the trouble with self-made people is that they worship the creator. **TNL**

**NATIONAL**  
AUTO LOCK SERVICE, INC.

**National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.**

**[www.laserkey.com](http://www.laserkey.com)**





*A Monthly Review of  
Technical Manuals*

# High Tech Tools



**H**igh Tech Tools auto lock service system is a complete system for auto lock service that includes lock-out instructions and everything in-between. High Tech's current set, the Model 2600, is sold only as a complete set. Each set contains all car opening tools, a four volume encyclopedia, wedge system, probe light, remote access system, strip savers, instructional video, and carrying case.

The High Tech Tools Encyclopedia is divided into several volumes. By dividing the Encyclopedia into separate volumes the locksmith can easily find exactly what he is looking for.

The Domestic Auto Lock Service Volume contains lockout information for all domestic automobiles from the early 70's to the present. Each car is covered in a three part system with detailed computer generated diagrams.

The step by step photo opening instructions give a view of the door lock linkages as seen from the inside of the car, and show how to properly insert the tool and its exact working position. The service volume illustrates two or

more methods for most vehicles. Very difficult cars have three or four different methods.

The Import Auto Truck & Van is just like the domestic volume except it covers every foreign car, all trucks, van and SUV's.

The Information Volume covers both foreign and domestic cars, trucks, vans and SUV's. The book lists key blank information, depth and space, code locations, code card information, lock part numbers, VIN number information and a virtual depth and space manual.

The Automotive Lock Service Volume covers general service information on steering column service, air bag service, depth and space, try out keys, general lock service information, V.A.T.S system, M.A.T.S and much more.

The Side Air Bag and Door Panel Service Volume covers servicing and safe unlocking of automobiles with side air bags. There are step by step instructions for most vehicles on door panel removal and installation.

For more information contact: High Tech Tools, 1400 SW 1 Street, Miami, FL 33135, Phone 800-323-8324.



FORD 20A

## LINCOLN TOWN CAR 1998

### INSTRUCTIONS:

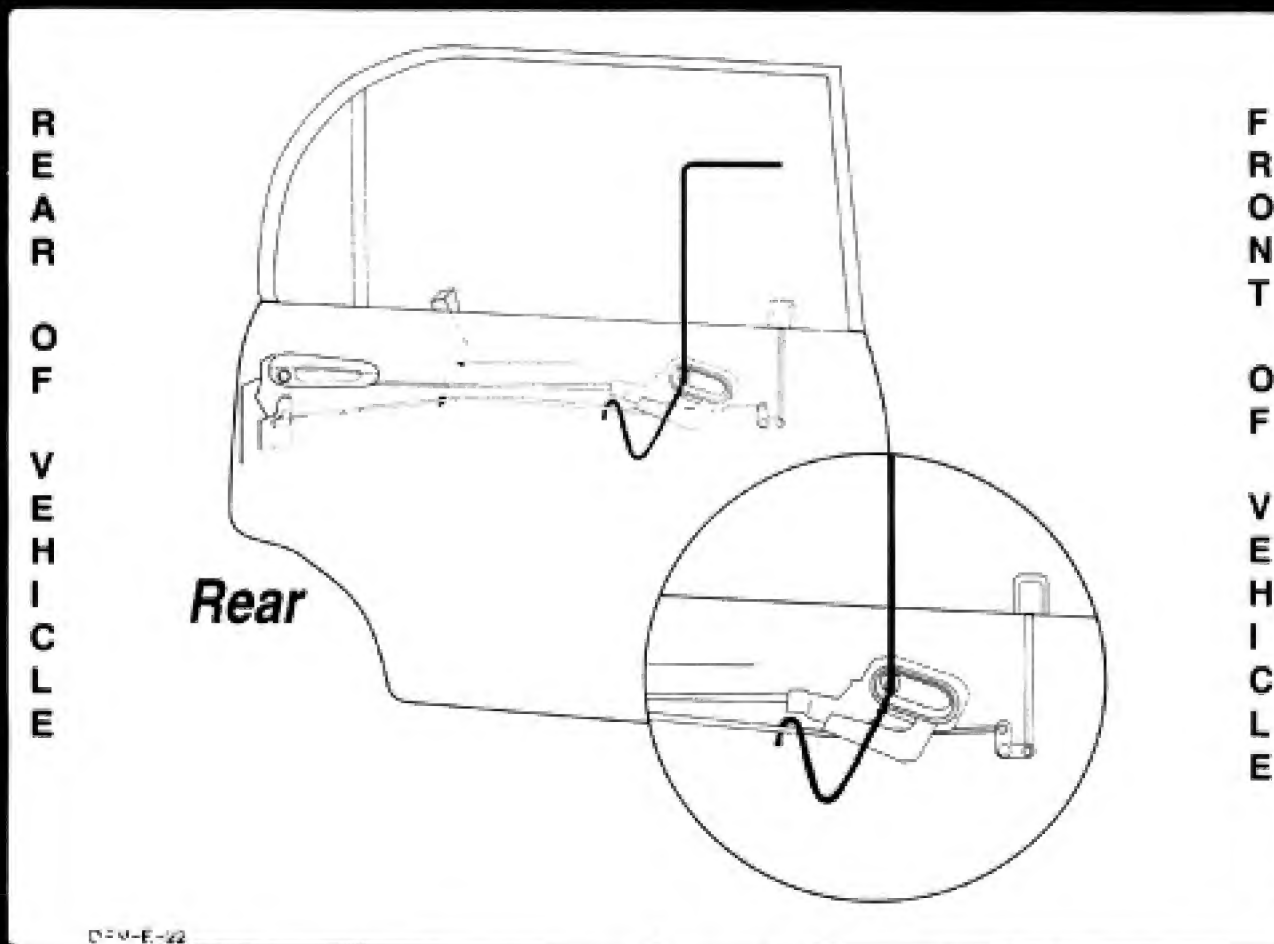
Opening Instructions

#### Tool : White Tool (#1823WH)

1. Separate glass from weatherstripping.
2. Point tip of tool toward front of car.
3. Lower tool into door until the tip of the tool rests on the top linkage (**see illustration below**).
4. Rotate the tool to bind the linkage.
5. Tilt the tool as to move the linkage towards the rear of the vehicle.

*Use Driver's Side Door*

### DIAGRAM:





Subaru 4

# Subaru Legacy Outback

INSTRUCTIONS

Opening Instructions

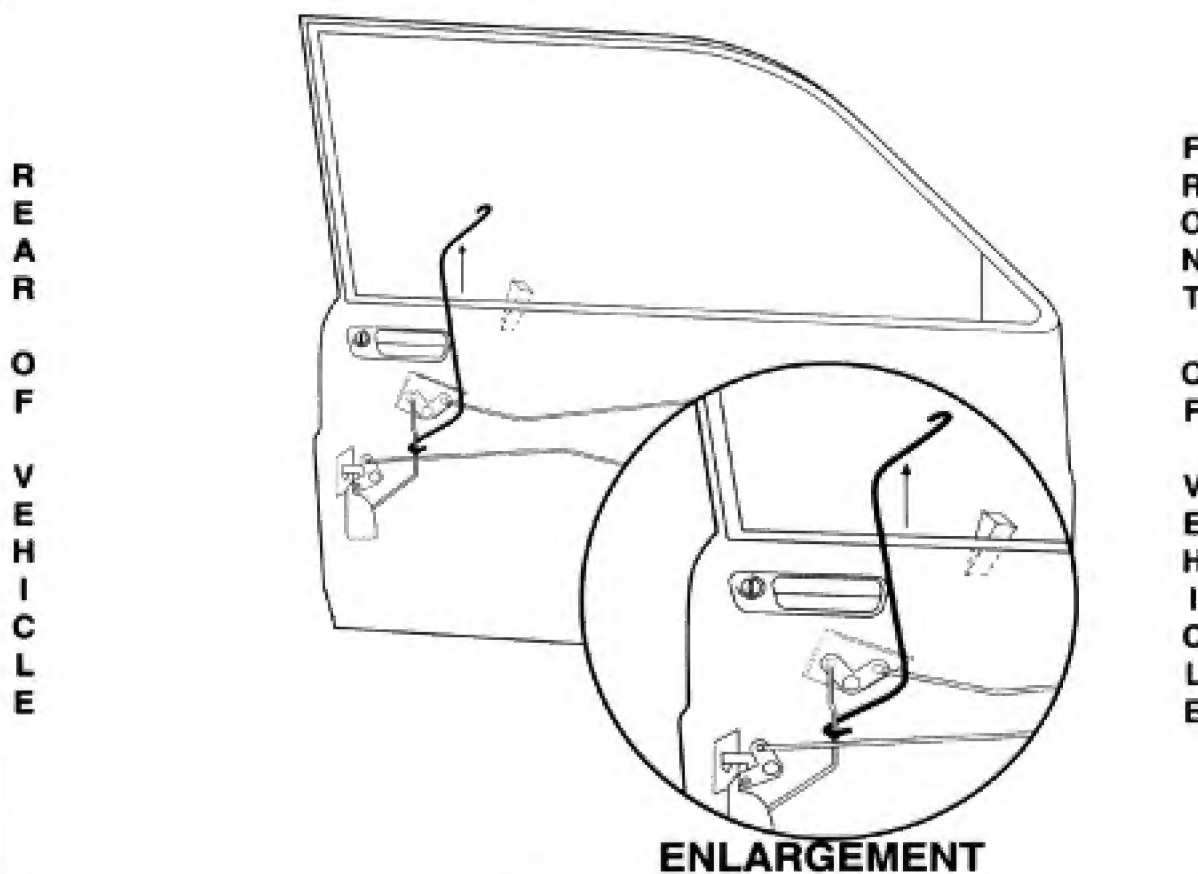
## Tool : S TOOL (#1847NC)

1. Separate glass from weather-strip with a wedge.
2. Use the tool to find your insertion position. Mark your position with the wedge and insert your tool.
3. Lower the tool below the inner door frame.
4. Lift the tool so tip is in front of bell crank.
5. Move bell crank towards rear of vehicle.

**Reminder:**  
Be sure to use  
the rubber  
tip on your  
1847NC "S"  
Tool



## DIAGRAM



FFV-F-82

TRU



# TECHNITIPS

## '98 Year-End Prizes!



**Grand Prize**  
Silca Bravo Duplicator



**1st Prize**  
HPC's 1200PCH  
Punch Machine



**2nd Prize**  
Mas Hamilton's Auditcon  
2100 & Certification Class



**3rd Prize**  
Curtis 2100 Duplicator



**4th Prize**  
SDC Magnetic Lock,  
Keypad and Exit Switch



**5th Prize**  
LaGard "Smart  
Guard"®



**6th Prize**  
\$500 in All Lock Products



**7th Prize**  
\$500 in ASP  
Auto Locks



**8th Prize**  
\$500 in Strattec Auto  
Products



**9th Prize**  
Arrow Exit Device  
and Mounting Kit



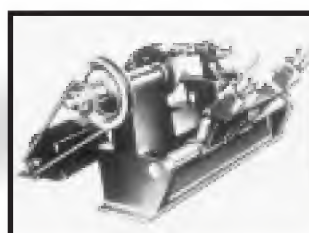
**10th Prize**  
Dewalt Cordless Drill



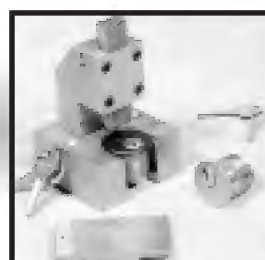
**11th Prize**  
Detex ECL-8010W  
Wetlock®



**12th Prize**  
Securitron DK-26  
Touchpad and CPU  
Board for Magnetic Lock



**13th Prize**  
Foley-Belsaw 200  
Key Machine



**14th Prize**  
Accu-Mark™ Key  
Stamping Machine



**15th Prize**  
S&G 6120  
Electronic Safe Lock



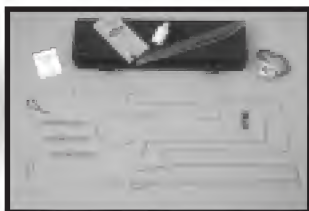
Continued from page 84

## These Prizes Awarded Each Month!

- All Lock Ford or GM Kwikit
- Aero Lock Tryout Key Set
- Strattec Racing Jacket
- HPC Pistol Pick™
- Sargent And Greenleaf
- 4400 Series Safe Deposit Box Lock
- A-1 Security Products
- ILCO Key Blanks (100 Blanks)
- PRO-LOK® Pk 15 Professional Lock Pick Set
- Tech Train Training Video
- Sieveking Products
- Gm E-Z Wheel Puller
- Major Manufacturing Products
- Slide Lock's "Z" Tool Opening Set
- The Sieveking Auto Key Guide
- Jet Key Blanks (50 Blanks)
- High Tech Tools
- LaGard Combo Guard



**16th Prize**  
High Tech Tools  
2500 Pro Set



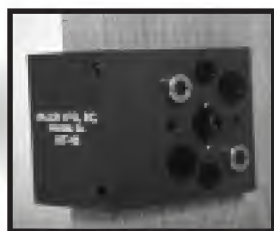
**17th Prize**  
Slide Lock's  
Master "Z" Tool Set



**18th Prize**  
ESP Products Sampler



**19th Prize**  
Baxter J V-1 and  
J V-5 Code Books



**20th Prize**  
Major  
Manufacturing's  
HIT-111 Drill Guide



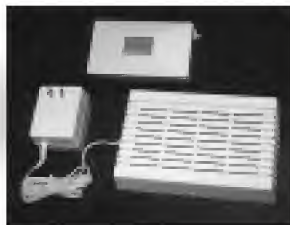
**21st Prize**  
Falle Pick Set From Mark  
Bates Associates



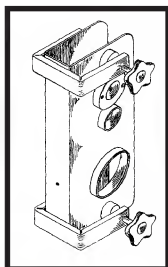
**22nd Prize**  
Sieveking Products  
Squeeze Play



**23rd Prize**  
ABUS Padlock's Marine  
Padlock Display



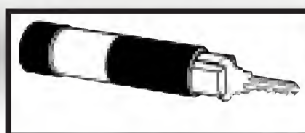
**24th Prize**  
Rodan's AV 100 Heavy  
Duty Door Annunciator



**25th Prize**  
A-1 J -50  
Installation J ig



**26th Prize**  
M.A.G. Engineering  
Sampler



**27th Prize**  
Framon Impressioning  
Handle

### Send in your tips, and win!

#### How To Enter

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to:

Jake Jakubowski, Technitips Editor,  
**The National Locksmith**,  
1533 Burgundy Parkway, Streamwood,  
IL 60107-1861 or send your tips via  
E-mail to: Natlock@aol.com

#### Every Tip Published Wins

If your tip is published you will win one of the monthly prizes listed. At the end of the year, we choose winners from all the monthly tips published, that will be awarded one of the fabulous year end prizes. All you have to do to win is enter.

By entering, your chances are greater than ever that you will win one of the prizes listed. This is the biggest Technitips prize year ever.

Prizes are arranged according to suggested retail price value.

*Tips  
start  
on next  
page!*

**The 15  
Minute  
Safe  
Opening  
Technique**

**28th Prize**  
Book — 15  
Minute Safe  
Opening  
Technique by  
Jake  
Jakubowski





BWD Ford or GM  
KwikIt Winner:  
**Chrysler Lock  
Service**

I was of the understanding that the newer Chrysler ignitions are not supposed to be serviceable. I found this not to be so.

To service this ignition, first remove the lower plastic shroud which is held in place by three screws. Insert a working key in the ignition and turn to the first position, depress the square retainer on the underside of the lock and pull the complete unit straight out of the column.

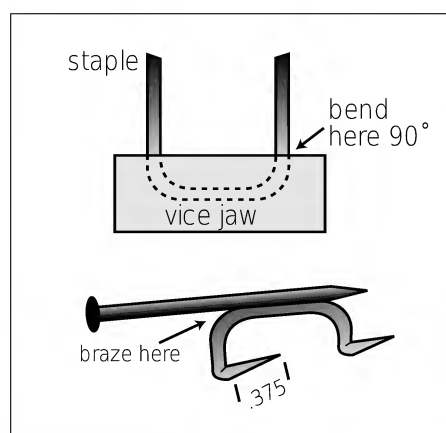
Once you have the ignition out, there is no visible retainer, or pressed on cam, so it appears that the lock will not come apart. Again, not so. Turn the key backwards to the accessory position, depress the rounded brass stop pin that limits the plug's travel and continue to turn the plug counter-clockwise past the accessory stop another ten or twenty degrees. The plug and key will now pull straight out for servicing or rekeying. Very much like the old GM, in-the-dash ignitions.

Be very careful not to lose the small, black key buzzer actuator, located in the side of the plug casing.

John C. Schmidt  
E-Mail



Aero Lock Tryout Key  
Set Winner:  
**Custom Tension Tool**



**Illustration 1.**

After trying different types of tension wrenches, I've come up with, what I think, is an excellent method of constructing highly workable and effective tools.

First use a 3/4" poultry staple (also know as fencing staple) and place it in your vise. (See illustration 1.)

Use a hammer to bend the staple to

## A Few Words From Jake...

There's one certainty about time. It goes by. And, it goes by in a hurry. Here it is September already and most of you Technitip Column readers have not sent in that tip you were going to send this year. You still have time to get a tip to me and win some great monthly prizes and qualify for a shot at a terrific year-end prize.

Speaking of year-end prizes, you folks must have noticed that this year-end prize list is longer than ever before. There are twenty-eight year-end prizes in the pool for our year-end drawing. When you consider the year-end prizes, the monthly prizes and the locksmith bucks that we give away, if you're not writing down an idea or trick to send in and claim your share of these goodies... you must have a broken hand.

1998 is slipping by quickly.

Y'all heah what I'm sayin' now?



by Jake  
Jakubowski

a 90° angle. Then braze a finishing nail, or similar small rod that will withstand brazing, and braze the nail and staple together as shown in the illustration. Use 5% silver brazing alloy. Now file, grind or use a Dremel tool to grind the ends of the staple to about .375 also shown in the illustration.

This makes a virtually indestructible tension wrench with an unobstructed view of the keyway. I've found that by using different sized staples, I can create very effective tension tools for peanut cylinders, wafer locks and tools to keep the dust covers on automotive door locks in the open position.

Robert E. Odom, Jr.  
Georgia

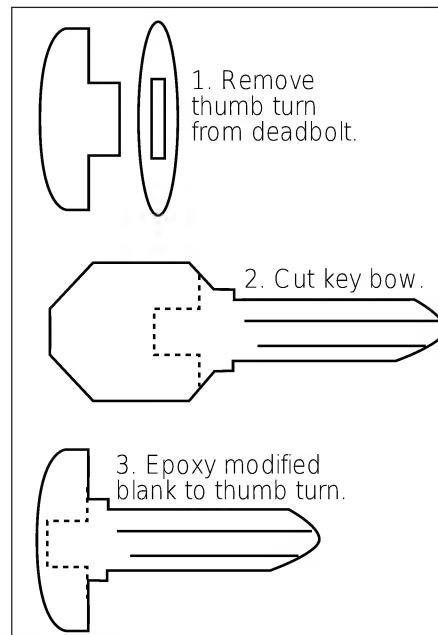
**Editors Note:** Robert, creativity is the hallmark of locksmiths and you showed a lot of creativity here. However, good turning tools are only a few cents a piece and since time is valuable, is a turning tool really worth this much time and effort?



Strattec Racing Jacket  
Winner:  
**T-turn Pizzazz**

Save the thumb-turns from those old single sided deadbolts that you replace for your customers and use them to add some pizzazz and professionalism to your next double sided deadbolt installation. How? Remove the turn knob from the discarded single sided deadbolts. (See illustration 2.)

Cut the bow off the cut key you're presently using for the installation (Arrow, Schlage, Kwikset, etc.) and form the blade as shown in the



**Illustration 2.**

illustration. Simply cut the blade of the blank down far enough to insert the "stub" into the thumb-turn on the deadbolt. Epoxy it in place using JB Weld or your favorite epoxy.

Now you have a thumb-turn for the customer's double cylinder deadbolt that the customer can remove. This gives your customer the security of a double cylinder deadbolt and the convenience of a single cylinder can help you increase those double cylinder sales. And, you can charge extra for the "custom work."

Patrick O'Leary  
New York



HPC Pistol Pick Winner:  
**Defeating Door  
Braces**

Here's a way to unlock a door that has a brace or "Police Lock" on it.



First, check the door for a gap under it, and determine the amount of "play" the door has. The more the better. If the brace can be unlocked by removing it, use a strip of wire or metal to hook and pull the brace to the side. I use a steel yard stick (for the heaviness of it) to tap and push the brace to the unlocked position. If the brace seems to be dragging, I've found that pulling on the door knob helps.

If the lock is set up as a deadlock, try to dislodge the brace from the floor socket. Hook the brace and pull to the side while vigorously jiggling the door. I have found on many installations that there is considerable play in the door and lock which makes bypassing this lock much easier.

Jack Tom  
New Jersey



*Sargent and Greenleaf  
4400 Series Safe  
Deposit Box Lock  
Winner:*

#### **Combination Cam Lock Retrofit**

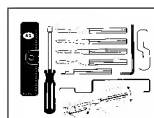
Here's how I converted a Sentry, 1170 key locking safe to a combination locking safe using a CCL combination cam lock. This was not a big money-making job, but it was challenging.

I removed the old key lock from the Sentry and although the new combination lock fit the hole, the mounting put the opening index of the CCL to the right or left side of the lock, not at top dead center. To correct this problem, I ground out a small area directly behind the lock to allow the screw that holds the lever on to clear.

Next I modified the hole so the CCL lock would fit with the opening index at the top of the dial. I ground two small notches (see illustration 3) on both the top and bottom of the CCL and used a sliding clip to hold it in place. Also in the illustration, you can see how I had to modify the cam to make it latch correctly.

As I said, not a big money-maker but definitely a challenge.

Jack Hole  
New York



*A-1 Security Products  
Winner:  
Glare Reduction*

Have you ever tried to read the wafers in an auto door lock using a scope with the pin depressor only to have the light reflect off the chrome caps and right into your eyes?

Since that bright reflection makes it difficult to see the wafers, I now use a black Magic Marker to temporarily "paint" the lock cap and dust cover - being careful of course not to get any on the auto's finish. Then, when I use my light, it doesn't glare back into my eyes.

When I'm done I wipe all the ink off with a little WD-40 on a soft rag.

LeRoy Gramza  
Michigan



*Ilco Key Blanks (100)  
Winner:  
Code Conversion*

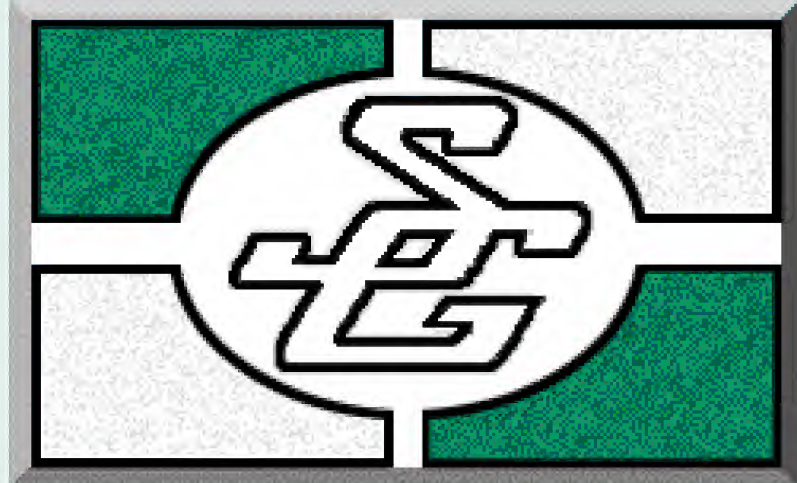
HON is now using cam locks made

by ESP on many of its file cabinets. These locks have the letters "E" or "R" stamped on the face of the lock followed by some numbers. If you don't have the codes for the "E" and "R" locks the "MA" appear to be the same.

I base that on five separate HON "E" and "R" codes that I was given by the factory and the HON "MA" codes were identical.

So, if you come across a HON lock with an "E" or "R" code change it to "MA".

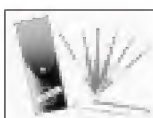
George Steiner  
Nevada



**Make Sargent &  
Greenleaf's  
Comptronic Locks  
your choice  
for electronic  
safelocking  
solutions.**

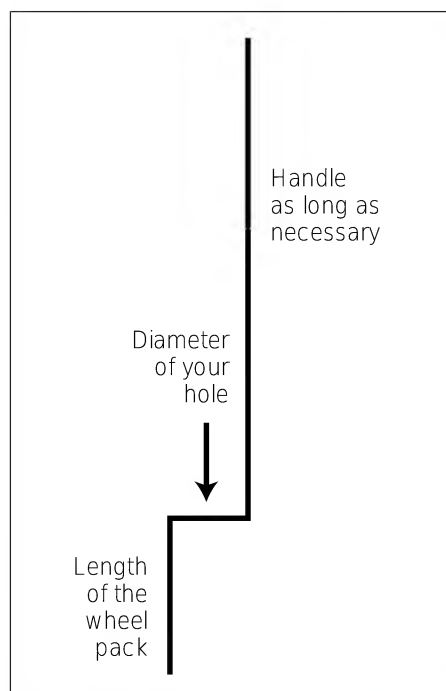
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**PRO-LOK™ Pick Set**  
**Winner:**  
**Wheel Alignment**  
**Tool**

I was drilling an S&G combination lock mounted RH, straight for the drop-in. Unfortunately, I missed the drop-in target by about an



**Illustration 4.**

eighth of an inch. I could bring all the gates into view and could see a part of the lever nose in the right corner of the gates, but could not get the lever to drop.

Because the spindle was hard to turn and transferring would have been time consuming, I used a piece of 1/16" bent spring wire (see illustration 4) to bring the gates into alignment under the fence.

I simply pushed the wire through the hole I had drilled and into the gates. Then using the longer piece of wire as a handle, I turned the wheel pack until it lined up and the fence dropped in.

Werner Schultz  
Germany



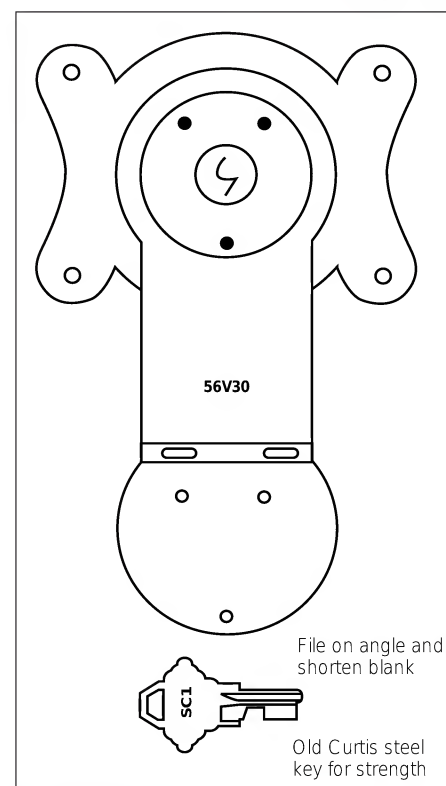
**Tech Train Training**  
**Video Winner:**  
**Steamer Trunk Key**

I had an antique steamer trunk that was locked and the customer wanted it opened and a key made for it. I picked the lock open, but could not find anything in the way of a key blank that I could use to generate a key and make it work properly.

I finally came upon an old Curtis steel SC-1 blank. (See illustration 5). I filed the top of the blank on an angle and it filled most of the keyway on the trunk's lock. I impressed the blank

and after a little work, the key operated the lock beautifully.

I am still looking for the proper blank. Any ideas?  
Daniel Stacey  
New York



**Illustration 5.**



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**It's not safe unless  
it's Schwab Safe.**

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**Editor's Note:** Daniel, I'm not one hundred percent sure, but the lock closely resembles an Eagle trunk lock that I have in my collection. The number that you included "56V30" could very well be an Eagle code for that lock. If you have access to any old Eagle (original or replacement), I'd try to find one that fits and then copy the key you made onto the original blank.]



*Sieeking Products GM  
E-Z Wheel Puller  
Winner:  
VATS Key  
Substitute*

A customer's 1990 Camaro required a #15 resistor value single-sided blank, but I didn't have any. Being it was a Sunday afternoon, I solved the customer's problem by cutting a mechanically correct key on a VKA100 adapter blank. Then I gave the customer a double sided #15 VATS blank, which I did have on the truck.

I showed the customer how to tape the double-sided resistor between the contacts on the adapter blank and start his car with it. I also told him that if he would come by the shop in the morning, I would cut him a working key on the correct blank.

Dennis Mahoney  
Illinois

**Major**  
MANUFACTURING, INC.

Major  
Manufacturing  
Winner:

### Set Screw Security

I frequently install Best/Falcon / Arrow, etc. I/C locks. These cylinders are generally shipped with the cores already installed in the housings. From a security standpoint, I guess it makes sense to keep the regional control keys out of the hands of the contractors, clerks and assorted employees. From an installation standpoint, it makes it impossible to install the angled security screw in the side of the cylinder housing.

If you try to install these I/C cylinders without the set screw in place, the Adams Rite set screw will simply fall out of position on the exterior side of LHRB and the interior side of RHRB mounted locks as the A/R set screw simply falls into the cavity left by the missing security screw in the side of the housing.

To alleviate this problem until a proper control key can be obtained, I insert the security screw into the outside of the housing and run it down far enough to allow the cylinder to screw into the lock housing properly. Then, I can tighten up the A/R set

screw without it falling into the cavity, since it now has a surface to grip.

Jeff Rosen  
Colorado



*Slide Lock's "Z" Tool  
Opening Set Winner:  
End Cutter Supply*

Channel Lock, Inc. makes an 8" long End Cutter (#748) that appears to be the same tool as the face cap pliers that we buy from our distributors. All Channel Lock tools have a lifetime warranty and you can call them at 1-800-724-3018, EXT 1 to request a catalog or distributor names.

I have also found these End Cutters work very well when cutting jumpers to recode certain remote control "clickers" and can be an excellent spanner to remove the screw-back from some quartz watches to change the battery.

Peter P. Schifferli  
New York



*The Sieeking Auto Key  
Guide Winner:  
Strike Locator*

Here's a tip for locating the strike that allows you to place it exactly where you want it, or allows you to adjust it

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accordingly if you need more or less play in a given door.

First, completely install the lockset, deadbolt, lever set, etc. Then extend the bolt or latch and coat it with a liberal application of lipstick! Retract the bolt, or latch, and close the door tightly. Now, simply extend the latch or bolt several times, causing the lipstick to mark the door jamb.

Next, open the door, locate the mark and place the strike plate over the mark left by the lipstick. You can locate the strike closer to the mark if you want very little play in the door, or you can leave a small gap between the mark and the edge of the strike hole so there would be a slightly looser fit. The looser fit might be preferable in the event that the door would expand from heat or direct sunlight.

Of course, you might take a little kidding from folks who see you carrying a tube of lipstick in your tool box.

Rick Duskewicz  
New York



*Jet Key Blanks (50)*  
Winner:  
**Taurus Troubles**

I had no luck one day trying to open a 1996 Ford Taurus with a Slim-

Jim. The vertical linkage is about three inches from the outside panel and is difficult to reach with a flat tool, which I seldom use anyway. My under the window tool didn't work either.

I used a PRO-LOK AO01 horizontal tool and inserted it to the left of the vertical linkage. With the tip of the tool pointing towards the left, the tool was placed against the part of the linkage where it begins to angle back toward the rear of the car. With a quarter turn to the right it popped the lock right open.

Merlin Bechtel  
Mississippi



*High Tech Tools*  
Winner:  
**Socket Lock It**

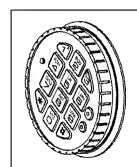
Having trouble holding nuts and bolts in your hex sockets when working on hard-to-reach auto door locks? A solution is near at hand!

Take a small glob of that black sticky glue (used to attach the plastic weather seal to the door's metal) and place it inside the tip of your socket. It really holds well while aligning the threads of nuts, in those difficult spaces.

This also works on Phillips head screws and is a blessing when putting

horse shoe-type clips on door locks that require a third hand.

T. A. Leonard  
E-Mail



*LaGard Combo Gard*  
Winner:  
**Open Index Dialing**

I know that anybody that knows anything about safe lock servicing will probably already know this. But, maybe there are some new folks out there that have never had to follow up on a do-it-yourselfer who changed their own combination and lost it.

When I arrived at my customer's location, he told me that he had changed his safe combo earlier and now the safe wouldn't open. I figured he may have dialed the new combo to the opening index instead of the change index. I dialed the combo he gave me eight numbers higher (the difference between the opening index and the change index on an S&G 6730) and opened the door.

Don't you just love D.I.Y.'s, Jake?

Jay Christie  
North Carolina

TNL



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# The LIGHTER Side

"Safari, Texas Style"



by  
Sara  
Probasco

**"B**ack from safari, are you?" I asked as Don entered the shop late one afternoon. When he did not smile, I decided to keep quiet for a while.

The day had been packed with the usual odds and ends of locksmith work until a call came in around noon. On the surface, it seemed a simple request. The door to a bedroom closet had been locked, and the key wouldn't open it.

"What's that address?" Don asked the customer.

"We're out at Cypress Creek," was the reply.

"No problem. I know where it is," Don said. "However, there will be added trip charge and mileage to come up there."

Cypress Creek is a community of large, new homes located approximately twenty-five miles north of us in the Texas Hill Country at the joining of Cypress Creek and the Frio River.

"Which house is it?" Don asked.

"It's the Big House," the man replied.

Don hesitated a moment before asking more. He didn't want to antagonize the customer. Obviously the man thought Don should immediately know which house he referred to, but there were a number of big houses in that area.

"Uh, what color is it?" he finally inquired.

"Brown, like the rest of the buildings out there. After you come in the main gate, drive straight back, around the big barn. You can't miss it."

That really stymied Don. He knew of no gate on the road into Cypress Springs. Furthermore, he had never seen a barn on anyone's property there. The area was purely residential.

"I guess I don't know that neck-of-the-woods as well as I thought I did," Don admitted. "Either that, or we're not thinking about the same place."

**The ranch manager was waiting at the Big House for Don and showed him to the bedroom closet that was giving them trouble.**

"I don't know about you, but I'm talking about Cypress Springs Ranch" the man said a bit impatiently. "Think you can get to it today?"

"No problem," Don replied. "Just give me directions on how to get there."

"Come out the highway seven miles past the old cemetery. You'll see a sign on the left, but you want to turn right. Then go seven miles more and you'll see... aw, never mind. My hand's going into town this morning. Best, you follow him back up here. I know how you city folks can be about following directions when there aren't any street signs; you'd just get lost and somebody'd have to come find you."

Don soon learned that Cypress Springs Ranch was several miles up-river from the Cypress Springs housing development, and getting there was not unlike a couple of other treks he'd taken since we moved near the Texas Hill Country, twelve years ago.

Even following along behind the rancher's hired hand, Don wondered if the guy really knew where he was going. They went seven miles, turned and went seven miles more, followed a twisting, turning route around this hill and that, over dry creek beds and through surging streams as Don followed behind.

Every now and then, the ranch hand would stop and point to sights of interest, leaning out the window to explain. "See that tree up there?" he said on one such occasion.

Don craned his neck to look where the man was pointing. High on the hill top stood a nearly bare tree.

"Eagle's nest," the man said. "I been watching her. Took her three days to build it."

When they came upon a couple of "bump gates," Don was careful to wait his turn. He remembered how one of our guys had made the mistake of charging through a similar gate in tandem with another vehicle. Not





quite fast enough going through, our man had managed to put a dent in the side of the van when the closing gate whopped it.

Don was beginning to wonder what he'd gotten himself into when they came upon a ten-foot high game-proof fence. The ranch hand pulled to a stop at the main entrance and stepped from his truck to unlock the gate. Ushering Don through, he closed and locked the gate behind them.

**"W**hen you come out, you'll find the key under one of these rocks," the man said, lifting one of three small rocks arranged in a triangle near the gatepost.

"Just be sure to lock up and put the key back after you're through the gate."

Once on the ranch property, Don's guide pointed out pastures dotted with zebras, numerous "black buck" deer, and a couple of Wilde beasts.

"Just follow this road," the man said as he got out of his truck at another gate. He unfastened a snap-wire on the chain that held the gate closed and hooked the gate to a post with a horseshoe to hold it open.

"Just go as far as you can go. It'll take you right to the Big House." With a friendly wave, the ranch hand climbed back into his truck and drove away.

The ranch manager was waiting at the Big House for Don and showed him to the bedroom closet that was giving them trouble. Secured with both a knob lock and a deadbolt, the manager couldn't get his key to work in either one. Don quickly determined that the key he'd been given was not the correct one for the locks, although the manager seemed certain he'd used it previously to open those locks.

After re-pinning the locks and making a new key, Don took the two keys to the manager to show him the difference. "I'll be up on the deck when you finish," the man had said, so that's where Don headed with his bill for the \$150 key. When he reached the upper deck, he was astonished. The view of the surrounding pastures and hills was magnificent from that vantage point.

While glancing about the deck, Don was surprised to see a hot tub there. Beside it sat the manager, dressed in a T-shirt and Levi's with

hiking boots. He was chewing tobacco and relaxing in a lounge chair. His hair was wet so Don assumed he'd been enjoying a dip in the tub.

"I'm bushed," the manager said, slicking his wet hair back from his face. "I've spent all day on the phone, and \$750 for fish to stock that pond." He pointed toward a small lake.

"The owner's son and some of his friends are coming tonight, and I need to have everything ready for them. I sure appreciate you coming out on short notice to get that key working."

"I haven't had many chances to see exotic game ranches up close," Don said to me later. "It was something, seeing animals you normally associate with places like Africa, right up the road from here." He smiled.

"There's one thing, though."

"What's that?" I asked.

"Their zebras are purely Texas bred. Either that, or they needed a bath."

"What do you mean?"

"Where else but in this dusty country would zebras be black and tan, instead of black and white?" **ENL**



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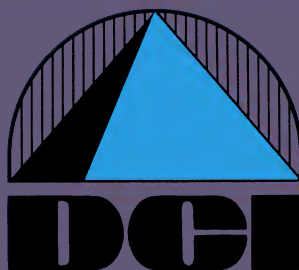
# Road Rally

A showcase of locksmith service vehicles.

If you think your vehicle has what it takes to be featured here, send photographs and descriptions to:  
The National Locksmith, Road Rally, 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861.

Owner: Wayne Adam,  
Wharton, TX

Model: 1995 Ford  
E 250 Van



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## Road Rally



Owner: Ron Berger,  
McKinney, TX  
Model: 1980 Chevy  
1 Ton van



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# Quick Entry

## UPDATE

by  
Steve  
Young



### 1998 Pontiac Grand Prix

**T**he new Grand Prix was introduced in the 1997 model year and was not changed significantly for 1998. (See photograph 1.) The Grand Prix is built on the same basic platform, and shares many features with the Oldsmobile Intrigue. The doors on both vehicles are very similar and both vehicles can be unlocked with the method listed below.

The ignition lock and the steering columns on each vehicle are completely different from each other. The Grand Prix uses the "CSS" steering column, which until 1997 had been used exclusively on trucks. This steering column has the lock mounted high on the right hand side of the column and is sometimes referred to as the "High Mount" steering column. The Intrigue uses the new in-dash ignition lock system. Both vehicles also require the use of a totally new key blank. Both of these ignition lock systems are covered in Tech-Train video #582, "Domestic Auto Lock Servicing Update #2".

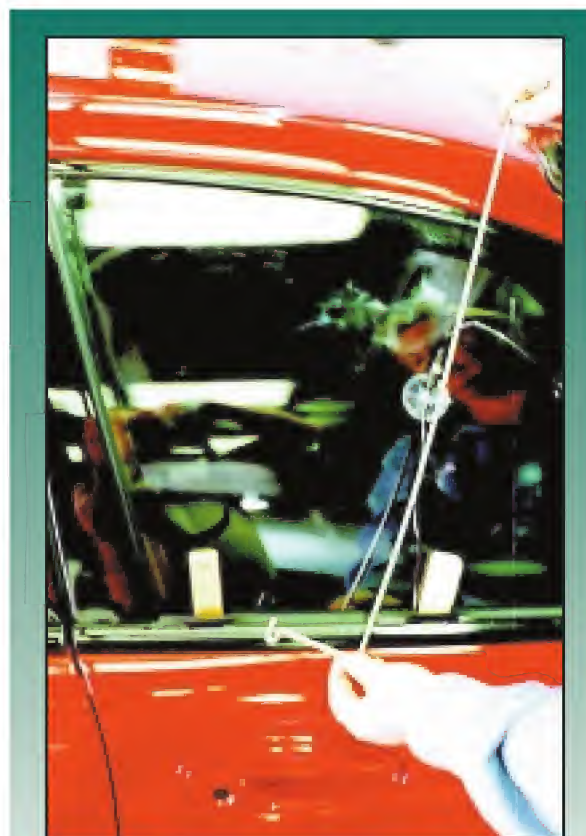
Strattec assigns a number to each grooving pattern or keyway that they manufacture in order to simplify the descriptions of each key blank. The "standard" 10-cut blanks use the "75 groove" pattern. The key blanks used by both the Grand Prix and the Intrigue use the "88 groove" pattern. The two grooving patterns are very similar at first glance. The 88 groove has slightly deeper warding than the 75 groove. Keys milled with the 88 groove will pass the keyway of all applications intended for the 75 groove, but keys milled with the 75 groove will not pass the keyway of locks specifically



**1. The new Grand Prix was introduced in the 1997 model year and was not changed significantly for 1998.**

designed for the 88 groove. This feature provides for a valet function based on two separate key blanks.

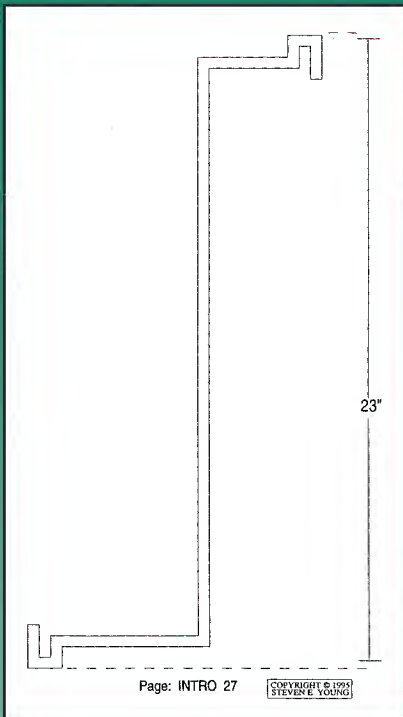
On the Grand Prix, the trunk and glove compartment locks are built to accept the 88 groove blanks only, while the ignition and door locks will accept keys milled with either the 88 groove or the 75 groove. The primary key for the car is cut on an 88 groove blank (Strattec part number 597253) and will pass all of the locks on the car. The valet key is cut on a 75 groove blank (Strattec part number 322465) so that it will not pass the trunk or glove box locks. If you accidentally duplicate a Grand Prix primary key onto a "standard" 10-cut key blank (with the 75 groove pattern) you will have unintentionally made a valet key. The only real difference between the Grand Prix primary blank and the Intrigue blank is the



**2. Begin by wedging open the door above the outside door handle.**



A.  
The Tech-  
Train 1008  
Tool.



3. Carefully  
insert the long  
end of the  
Tech-Train  
1008 tool into  
the door and  
grasp the inside  
lock control  
linkage rod.

overall length of the blank and the size of the bow. Because the Intrigue uses a dash mounted ignition lock, it requires the extended blank with the larger bow.

#### OPENING THE GRAND PRIX

The linkage rods leading to the latch are sandwiched between the inner skin of the door and the door panel except for a short length (about 6") that is exposed at the rear of the door. The inside lock control linkage rod is the lower of the two rods connected to the latch. The two rods cross over each other in the short length that is exposed inside the door. As the two rods cross over each other the inside lock control linkage rod is the rod closest to the outside of the door.

To unlock the car, begin by wedging open the door above the outside door handle. (See *photograph 2*.) Insert an inspection light into the door and visually locate the two diagonal linkage rods at the rear of the door. Carefully insert the long end of the Tech-Train 1008 tool (see *illustration A*) into the door and grasp the inside lock control linkage rod from below. (See *photograph 3*.) The inside lock control rod will be the rod that is closest to the outside of the door. Twist the top end of the tool in order to lock onto the linkage rod, then lever the linkage rod forward to unlock the car. (See *photograph 4*.) This opening can be done by feel, but I strongly recommend



4. The two rods cross over each other in the short length that is exposed inside the door.

the use of a quality inspection light such as the TT-1510 that is shown here. In addition, the TT-1003 tool can be substituted for the TT-1008 if you prefer to grasp the linkage rod from above.

Because the door locks are plate-tumbler locks and not sidebar locks, picking the door lock in order to unlock the car is another option. I have had success in picking these locks with both standard and rocker style picks. I do seem to have better luck with the rocker style picks. The direction to pick the passenger side door lock is clockwise. The driver's side door lock will pick counter clockwise to unlock.

#### QUICK REFERENCE GUIDE:

##### Vehicle:

1997 - 1998 Pontiac Grand Prix

##### Direction of Turn (passenger side):

Clockwise (CW)

##### Tool:

TT-1008 (long end)

##### Lock System:

GM 10-Cut, CSS Steering Column

##### Primary Key Blank:

Strattec 597253 (88 groove)

##### Valet Key Blank:

Strattec 322465 (75 groove)

TNL



# Reed Report

**A** brief report on my opinion of the ALOA convention: I felt the convention overall was very good. Everyone seemed to be in a much better mood than over years past. I enjoyed "FanFair," a country music festival that was the same weekend, and it didn't seem to interfere with the convention.

I LOVE starting the convention at noon each day, and I am beginning to like the Thursday show. Attendance was very good on that day, and it allows us to use Sunday as a travel day. Keep up the good work ALOA, you are definitely improving. However, on a down note, I have to mention the hotel I stayed in. It was the host hotel, the Renaissance.

There was no hot water, a striped out faucet knob on the tub, and after fixing the knob it took two to turn on the water. The elevator acted up throughout the entire show, and on Saturday night, our most tired night, it finally went totally out. You guessed it - we had to walk up twelve flights of stairs to get to our room. All the way up I kept saying to Caroline, "\$126.00 per night, you would think they would at least have a good elevator." Well they didn't, so learn from my experience. If you are ever staying in Nashville DO NOT stay at the Renaissance Hotel.

**Q.** What is meant by the "Rake Method?"

**A.** This is the most common method used to pick locks. It is based entirely on luck. Although the "feel" method is better the "rake" method is usually faster.

To rake a lock, insert a diamond, hook or rifle pick into the lock while putting turning pressure on the cylinder with your tension wrench. Insert the pick past the last set of pins and quickly move the pick in and out. This causes the pins to jump up and down and, if you are lucky, you will hit the shear line and the lock will open.

According to Gerry Finch, who is in my opinion the leading "pick" man in the country, a real professional locksmith will use the "feel" method. He has a very good book out on the subject, so give me a call for the details.

**Q.** Who made the first tubular lock?

**A.** Chicago Lock Co.



Yours For Better Security,

*Bill Reed*  
Bill Reed

## Scatter Shooting while remembering . . . Mary Lewis

**Q.** How do you tell the difference between a "right handed" door and a "left handed" door?

**A.** When viewed from the exterior side, a door that opens inward and has hinges on the right is a "right handed" door.

**Q.** Is it legal to duplicate a U.S. Post Office key, and where can I get the blanks?

**A.** No, it is NOT legal, and you can't get the blanks. They use a reverse Yale 8 keyway.

**Q.** For the best in high security, how can I determine which lock to purchase?

**A.** You'll be safe with an ANSI Grade 1 deadbolt lock with a UL-437 listed cylinder, patented key and hardened steel bolt. Example: Mul-T-Lock, ASSA, Abloy, Miwa.

**Q.** For the best in high security, how can I determine which lock to purchase?

**A.** You'll be safe with an ANSI Grade 1 deadbolt lock with a UL-437 listed cylinder, patented key and hardened steel bolt. Example: Mul-T-Lock, ASSA, Abloy, Miwa.

**Q.** Why do some locks use spool and mushroom pins?

**A.** To make them harder to pick. **INL**

If you have a question for Bill Reed, would like to talk to him concerning anything in this column, or want to attend a Bill Reed seminar at one of the locations listed below, you may contact Bill directly on his toll free number at: (888) 801-2003.

|          |                   |         |                    |
|----------|-------------------|---------|--------------------|
| Sept. 26 | New Braunfels, TX | Nov. 21 | Tulsa, OK          |
| Oct. 11  | Chicago, IL       | Dec. 5  | Orlando, FL        |
| Oct. 17  | Omaha, NE         | Dec. 12 | Salt Lake City, UT |



# The National Locksmith's

## October 1998 Planning Calendar

| SUNDAY  | MONDAY   | TUESDAY   | WEDNESDAY  | THURSDAY   | FRIDAY   | SATURDAY   |
|---|--|---|--|--|--|--|
|   |  |   |  | POLA Trade Show<br>Independence, OH<br>(216) 676-8464 (Martha Egler)<br>Lockmasters 5 Day GSA<br>Training, Sept 28-Oct 2<br>Nicholasville, KY<br>(800) 654-0637<br><b>1</b>                                  | POLA Trade Show<br>Independence, OH<br>Lockmasters 5 Day GSA<br>Training, Sept 28-Oct 2<br>Nicholasville, KY<br><b>2</b>               | POLA Trade Show<br>Independence, OH<br>Mas-Hamilton Auditcon<br>System 2100 Course<br>Jacksonville, FL<br>New York, NY<br>(606) 253-4744 X180<br><b>3</b>  |
| POLA Trade Show<br>Independence, OH<br>California Flea Market<br>Hayward, CA<br>(415) 479-8879 (Lee Page)<br><b>4</b>   | Lockmasters 3 Day GSA<br>Training, Nicholasville, KY<br>(800) 654-0637<br><b>5</b>   | Lockmasters 3 Day GSA<br>Training, Nicholasville, KY<br><b>6</b>  | Lockmasters 3 Day GSA<br>Training, Nicholasville, KY<br><b>7</b>   |  |  | Mas-Hamilton Auditcon System<br>2100 Course, Oct 10—<br>Albuquerque, NM & Lincoln, NE<br>Oct 17—Chicago & Pittsburgh<br>X-07 Certification Oct 10-11—<br>Orlando, FL<br>(606) 253-4744 X180<br><b>10</b>   |
| Reed Seminar<br>Chicago, IL<br>(888) 801-2003<br>Mas-Hamilton X-07<br>Certification, Orlando, FL<br><b>11</b>   | Vindicator Course<br>Oct 12—Lexington, KY<br>Oct 17—Salt Lake City, UT<br>(606) 253-4744 X180<br>Lockmasters Safe Lock<br>Servicing, Nicholasville, KY<br>(800) 654-0637<br><b>12</b><br><i>Columbus Day</i> | Lockmasters Safe Lock<br>Servicing, Nicholasville, KY<br><b>13</b>  | Lockmasters Safe Lock<br>Servicing, Nicholasville, KY<br><b>14</b>   | MINK Convention<br>Omaha, NE<br>(402) 330-4759 (Elmer Howard)<br>Lockmasters Safe Lock<br>Servicing, Nicholasville, KY<br><b>15</b>  | MINK Convention<br>Omaha, NE<br><b>16</b>  | MINK Convention—Omaha, NE<br>Reed Seminar—Omaha, NE<br>(888) 801-2003<br>MBA Combination Lock Tech.<br>Nicholasville, KY (888) 622-5495<br>Mas-Hamilton—See Oct 10th<br>Vindicator—See Oct 12<br><b>17</b> |
| MINK Convention<br>Omaha, NE<br>MBA Time Locks<br>Nicholasville, KY<br>(888) 622-5495<br>Lockmasters Combination<br>Lock Man., Nicholasville, KY<br>(800) 654-0637<br><b>18</b> | 25th Tri-Regional Conference<br>Portland, OR<br>(503) 253-0424 (Shirley Kerr)<br>Lockmasters Combination<br>Lock Man., Nicholasville, KY<br><b>19</b>  | 25th Tri-Regional Conference<br>Portland, OR<br>Lockmasters Combination<br>Lock Man., Nicholasville, KY<br><b>20</b>    | 25th Tri-Regional Conference<br>Portland, OR<br>Mas-Hamilton X-07<br>Certification, Portland, OR<br>(606) 253-4744 X180<br>Lockmasters Basic Safe Pen.<br>Nicholasville, KY<br>(800) 654-0637<br><b>21</b> | 25th Tri-Regional Conference<br>Portland, OR<br>Mas-Hamilton X-07<br>Certification, Portland, OR<br>Lockmasters Basic Safe Pen.<br>Nicholasville, KY<br>Yankee—Providence, RI<br>(800) 209-8266<br><b>22</b> | 25th Tri-Regional Conference<br>Portland, OR<br>Lockmasters Basic Safe Pen.<br>Nicholasville, KY<br>Yankee—Providence, RI<br><b>23</b> | 25th Tri-Regional Conference<br>Portland, OR<br>Mas-Hamilton Auditcon<br>System 2100 Course<br>Birmingham, PA & Dallas, TX<br>(606) 253-4744 X180<br>Yankee—Providence, RI<br><b>24</b>                    |
| 25th Tri-Regional Conference<br>Portland, OR<br>Lockmasters Electronic Safe<br>Lock Course<br>Nicholasville, KY<br>(800) 654-0637<br>Yankee—Providence, RI<br><b>25</b>         | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Electronic Safe Lock Course<br>Nicholasville, KY<br>(800) 654-0637<br><b>26</b>  | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Electronic Safe Lock Course<br>Nicholasville, KY<br><b>27</b> | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Electronic Safe Lock Course<br>Nicholasville, KY<br><b>28</b>  | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Nicholasville, KY<br><b>29</b>   | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Nicholasville, KY<br><b>30</b>   | Lockmasters Professional<br>Locksmithing, Oct 26-Nov 6<br>Nicholasville, KY<br>DHI<br>Oct 31-Nov 2—Orlando, FL<br>(703) 222-2010<br><i>Halloween</i><br><b>31</b>  |
|   |  |   |  |  |  |  |



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# BUSINESS BRIEFS

## Schwab Corp. Appoints New Rep Groups

Schwab has announced the appointment of three new rep groups. The three new groups have been hired to cover the 13 Western states. Meucci and Associates (425-255-8590) will be covering Alaska; Byram Tri-West (562-927-7360) will cover California, Arizona, Nevada and Hawaii, and RMMR Milne Associates (303-779-3636) will be responsible for Colorado, Utah, New Mexico, Montana, eastern Idaho, Wyoming and El Paso, Texas.

## Ilco Unican Corp. Appoints Stephenson

ILCO UNICAN Corp. announced the addition of Charles Stephenson, CPS to their Winston-Salem NC staff. Charles will assume the role of Product Manager for electronic products marketed from the Winston-Salem location, namely Safe Locks and the new EPL4000 electronic door lock.

## Akron Hardware Adds Arrow Line

Akron Hardware Consultants has announced that it is now handling the Arrow Architectural Hardware line of door hardware products. The company stocks nearly 1,000 different Arrow items at warehouses in Akron, Ohio, and Chandler, Arizona.

For more information, call: 800-321-9602.

## Sargent & Greenleaf's Arm-A-Dor™ Earns Hurricane Approval Rating

Now when you use Sargent & Greenleaf's Arm-A-Dor™ secure panic exit hardware for employee and other back-of-store exits, there's one less thing to worry about when hurricanes threaten. The Metropolitan Dade County Office of Code Compliance has granted their first and only



component hurricane approval rating to the Arm-A-Dor Automatic and Manual Lock Exit Device assemblies. The component rating includes Arm-A-Dor models with or without an alarm option, as well as the UL 10B listed fire rated version of the hardware.



**Bob  
Swoope  
Named  
Alarm Lock  
National  
Sales  
Manager**

NAPCO Security Group's Alarm Lock Division announced the appointment of Bob Swoope as the new National Sales Manager. Bob brings to Alarm Lock 24 years of experience in the Locksmith industry dealing with manufacturers, distributors and wholesalers alike. He was Director of Advertising for Locksmith Ledger for five years and understands the ins and outs of the security business.

For more information contact Bob Swoope at 800-645-9445 ext. 375 or e-mail bswoope@napcosecurity.com.

## DoorKing Expands Sales Staff

DoorKing has expanded its Sales Staff with the addition of two new Regional Sales Managers, and the addition of an inside Sales Consultant.

Jim Wilkes will serve as Regional Sales Manager and be responsible for maintaining and developing sales in Southern California, Arizona and Nevada. Don Torres joined DoorKing as Regional Sales Manager for Northern California. Stephanie Wilson has moved from the companies Order Entry Dept. to become an inside sales consultant.



For more information, contact the DoorKing Sales Department at 800-826-7493.

## Security Lock Distributors Now Stock:



K e r i Systems - Line of controllers, proximity readers and Windows™ software.

Von Duprin/LCN - New six page handbook of electronic and mechanical products.

Glynn-Johnson Stops, pivots, overhead holders, flush and surface bolts as well as latches and accessories. Additionally they will stock the new HL Push/Pull Latch, Mortise Lock Combination and Privacy Function and Glynn-Johnson's UL-approved automatic and constant latching flush bolts in every depth, style, function and finish.



For more information phone 800-847-5625 or fax 800-878-6400.

## Ace Lock & Security Supply Now Stocks:

Master Lock™ Pro Series manufactured of solid brass bodies and boron alloy shackles, it offers three rekeyable designs to accommodate the most common cylinders including interchangeable core.



CCL™ Sesamee Gun Blok™ constructed of strong, sturdy zinc, with protective rubber pads, the Gun Blok permits the user to



set his own combination, with up to 1,000 different combinations possible for maximum gun security.

For more information phone 800-ACE-LOCK or fax 800-ACE-FAX4.

## Access Hardware Supply Now Stocks:

Locknetics Pro-Line Series consists of four different locking applications; an exit device, electric strike, and a mortise-cylindrical lock that are all stand alone and battery operated.

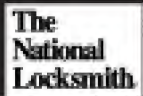
Securitron Plug In Power Module - Available in 12 or 24 volt versions and features battery charging circuit, fire alarm interface, 1 amp breakered output and a two year warranty.

Securitron Shear Aligning Magnalock - Totally concealed mounting can be adapted to vertical or horizontal application and is perfect for bi-parting or sliding doors.

Jackson Corporation - 10 and 20 series exit devices and a variety of overhead concealed 20 - 330 series closers.

For more information contact A.H.S. at 800-348-2263 or fax 800-435-8233. **TNL**





# KEY CODES

## Hyundai Elantra T0001-T1000

*The HPC 1200CMB  
code card for this code  
series is between pages  
110-113.*

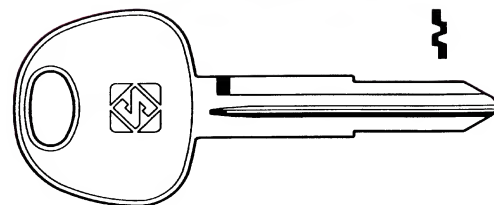
**Key Blanks:**

Curtis HY14

Ilco X236

Ilco EZ HY14

Silca HYN11

**Number of Cuts: 8**
**M.A.C.S.: 2**
**Key Gauged: Shoulder**
**Cut to Cut Spacings: .083**
**Cut Depth Increments: .024**
**HPC 1200CM**
**Code Card: CF302**
**Cutter: CW47MC**
**Jaw: A**
**Stop: Shoulder**
**HPC Punch:**
**PCH Card: PF302L, PF302R**
**Punch: 47**
**Framon:**
**Cuts Start at: .098**
**Spacing: .083**
**Block #: 5**
**Depth Increments: .024**
**Curtis:**
**Cam: DC-3**
**Carriage: DC-3A**
**A-1 Pack-A-Punch:**
**PAK-HYK (V5)**

**Spacings:**

 1 - .098  
 2 - .181  
 3 - .264  
 4 - .346  
 5 - .429  
 6 - .512  
 7 - .594  
 8 - .677

**Depths:**

 1 = .314  
 2 = .291  
 3 = .267  
 4 = .244

|       |          |       |          |       |          |       |          |       |          |       |          |
|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|
| T0001 | 22313311 | T0036 | 32332211 | T0071 | 42332321 | T0106 | 42112213 | T0141 | 13223424 | T0176 | 31343121 |
| T0002 | 43313442 | T0037 | 43132213 | T0072 | 23442421 | T0107 | 22134211 | T0142 | 23434324 | T0177 | 31213424 |
| T0003 | 44332432 | T0038 | 23213234 | T0073 | 34244212 | T0108 | 44212343 | T0143 | 23133424 | T0178 | 33124423 |
| T0004 | 31224323 | T0039 | 44213313 | T0074 | 13231312 | T0109 | 43124331 | T0144 | 21231134 | T0179 | 34242124 |
| T0005 | 33221131 | T0040 | 24312431 | T0075 | 21242334 | T0110 | 24334234 | T0145 | 12343124 | T0180 | 32321321 |
| T0006 | 32112344 | T0041 | 22313121 | T0076 | 32324424 | T0111 | 42331242 | T0146 | 34434312 | T0181 | 13223213 |
| T0007 | 12123313 | T0042 | 43313124 | T0077 | 43131243 | T0112 | 44332131 | T0147 | 22133131 | T0182 | 23432244 |
| T0008 | 13423442 | T0043 | 44332242 | T0078 | 23134422 | T0113 | 43311322 | T0148 | 44211323 | T0183 | 23132312 |
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| T0010 | 42121233 | T0045 | 33213422 | T0080 | 24334423 | T0115 | 13422421 | T0150 | 24332231 | T0185 | 12334242 |
| T0011 | 42334324 | T0048 | 31344324 | T0081 | 22134324 | T0116 | 31343442 | T0151 | 42324431 | T0186 | 34433422 |
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| T0035 | 21243213 | T0070 | 42112424 | T0105 | 12343434 | T0140 | 32323112 | T0175 | 13421213 | T0210 | 34433242 |





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| T0212 | 32321213 | T0242 | 43442212 | T0272 | 32312244 | T0302 | 34231132 |
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| T0236 | 34234221 | T0266 | 43242433 | T0296 | 34231223 | T0326 | 34432213 |
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| T0337 | 23422443 | T0367 | 31132312 | T0397 | 23421312 | T0427 | 12313422 |
| T0338 | 11332434 | T0368 | 13323242 | T0398 | 11324424 | T0428 | 34221324 |
| T0339 | 43113443 | T0389 | 43234234 | T0399 | 43113224 | T0429 | 43232424 |
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| T0343 | 22113421 | T0373 | 33113424 | T0403 | 24313223 | T0433 | 11323442 |
| T0344 | 43433224 | T0374 | 13134434 | T0404 | 44321224 | T0434 | 32243424 |
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| T0351 | 12323431 | T0381 | 42312343 | T0411 | 31322443 | T0441 | 21124424 |
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| T0357 | 23421344 | T0387 | 31132234 | T0417 | 43432342 | T0447 | 12313342 |
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| T0359 | 43113431 | T0389 | 43234212 | T0419 | 42312313 | T0449 | 43232344 |
| T0360 | 23123443 | T0390 | 24313244 | T0420 | 23121233 | T0450 | 13132423 |

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| T0451 31322312 | T0463 24312343 | T0475 31123443 | T0487 12312124 | T0499 42243231 | T0564 42231332 |
| T0452 13321232 | T0464 44313324 | T0476 34422433 | T0488 34212131 | T0500 23112432 | T0565 31122431 |
| T0453 11323243 | T0465 21343424 | T0477 43431321 | T0489 43232121 | T0501 11322133 | T0566 44312133 |
| T0454 32243421 | T0466 42443112 | T0478 32443342 | T0490 13132213 | T0502 43231224 | T0567 23322431 |
| T0455 31124312 | T0467 12312323 | T0479 42243312 | T0491 31321344 | T0503 34422123 | T0568 13123224 |
| T0456 34423324 | T0468 34213232 | T0480 23113124 | T0492 13313224 | T0504 42243124 | T0569 42433243 |
| T0457 43431324 | T0469 43232312 | T0481 21123342 | T0493 11322331 | T0505 31123213 | T0570 13443432 |
| T0458 32443431 | T0470 13132242 | T0482 23342311 | T0494 32233244 | T0506 44313231 | T0571 21334434 |
| T0459 42244323 | T0471 31322132 | T0483 24312313 | T0495 31123324 | T0507 23342112 | T0572 32231311 |
| T0460 23113213 | T0472 13321123 | T0484 44313243 | T0496 34422421 | T0508 13131344 | T0573 22434423 |
| T0461 21124234 | T0473 11323212 | T0485 21343244 | T0497 43431243 | T0509 42442311 | T0574 34211221 |
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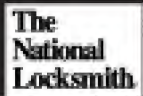


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| T0511 21342323 | T0564 42231332 |
| T0512 32233121 | T0565 31122431 |
| T0513 23112343 | T0566 44312133 |
| T0514 34212123 | T0567 23322431 |
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| T0516 31321123 | T0569 42433243 |
| T0517 43431213 | T0570 13443432 |
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| T0530 21121323 | T0583 34421121 |
| T0531 21342231 | T0584 42231313 |
| T0532 32232431 | T0585 24434331 |
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| T0535 12311332 | T0588 13123221 |
| T0536 31313442 | T0589 42433132 |
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| T0539 24311331 | T0592 32213431 |
| T0540 32442423 | T0593 22434213 |
| T0541 11321324 | T0594 33442432 |
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|-------|----------|-------|----------|-------|----------|
| T0629 | 43423134 | T0694 | 31243322 | T0759 | 24232134 |
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## Hyundai Elantra T0001-T1000

|       |          |       |          |       |          |       |          |       |          |       |          |
|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|
| T0824 | 42421343 | T0854 | 24423234 | T0884 | 42344211 | T0914 | 13431231 | T0944 | 32344213 | T0974 | 13424313 |
| T0825 | 13432423 | T0855 | 22343131 | T0885 | 13431243 | T0915 | 11224433 | T0945 | 42123134 | T0975 | 11221234 |
| T0826 | 24221311 | T0856 | 13243242 | T0886 | 24213312 | T0916 | 23233124 | T0946 | 42342343 | T0976 | 23224313 |
| T0827 | 11233234 | T0857 | 12212434 | T0887 | 11231323 | T0917 | 24213121 | T0947 | 32123231 | T0977 | 24211213 |
| T0828 | 34322442 | T0858 | 33242231 | T0888 | 34321232 | T0918 | 43133244 | T0948 | 33231221 | T0978 | 43133112 |
| T0829 | 12433421 | T0859 | 42131134 | T0889 | 12432442 | T0919 | 12134321 | T0949 | 34312424 | T0979 | 12132234 |
| T0830 | 23243211 | T0860 | 44232113 | T0890 | 23234321 | T0920 | 43324221 | T0950 | 12424321 | T0980 | 43322421 |
| T0831 | 32422344 | T0861 | 43324422 | T0891 | 32421323 | T0921 | 21313244 | T0951 | 24344313 | T0981 | 21311234 |
| T0832 | 31234211 | T0862 | 21321332 | T0892 | 31232231 | T0922 | 44231231 | T0952 | 13234243 | T0982 | 44221122 |
| T0833 | 32132243 | T0863 | 43134311 | T0893 | 32131223 | T0923 | 22334312 | T0953 | 31231322 | T0983 | 22313443 |
| T0834 | 24423312 | T0864 | 42344331 | T0894 | 24421211 | T0924 | 32344322 | T0954 | 13424433 | T0984 | 32342244 |
| T0835 | 22343321 | T0885 | 13431322 | T0895 | 22342433 | T0925 | 42123243 | T0955 | 11223323 | T0985 | 42122433 |
| T0836 | 13243322 | T0866 | 24213423 | T0896 | 13243112 | T0926 | 42343234 | T0956 | 23231213 | T0986 | 42342213 |
| T0837 | 12213233 | T0867 | 11231342 | T0897 | 12134344 | T0927 | 32123311 | T0957 | 24212334 | T0987 | 32121332 |
| T0838 | 33242442 | T0868 | 34322313 | T0898 | 33234424 | T0928 | 33231242 | T0958 | 43133124 | T0988 | 33224211 |
| T0839 | 42131221 | T0889 | 12433122 | T0899 | 42124211 | T0929 | 34313211 | T0959 | 12133432 | T0989 | 34312234 |
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| T0841 | 43342124 | T0871 | 32422133 | T0901 | 21313322 | T0931 | 24344332 | T0961 | 21312343 | T0991 | 24343243 |
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| T0851 | 32422331 | T0881 | 43324224 | T0911 | 24421132 | T0941 | 21313132 | T0971 | 24344221 |       |          |
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| T0853 | 32132132 | T0883 | 43134242 | T0913 | 31232213 | T0943 | 22332134 | T0973 | 31231244 |       |          |

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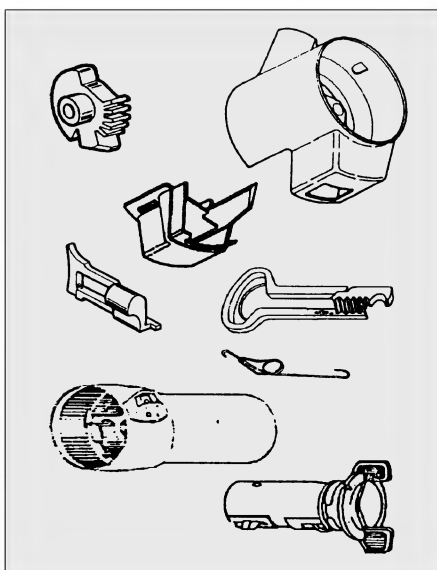
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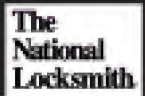
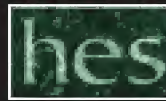


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## TEST DRIVE!

Architectural Builders Hardware is a minority owned company that has been making door and hardware products for the contracting industry for more than 5 years, specializing in door holders and stops, push/pull latches, electromagnetic door releases and applied stops. One of its more interesting products is their line of push/pull latches.

The premise of push/pull trim is simple: with either a slight push or pull on a lever, a springlatch, deadlatch or in some cases a deadbolt, can be retracted allowing free and easy entrance or egress.

### PRODUCT:

When it comes to push/pull trim, Architectural Builders Hardware Mfg., Inc. (ABH) has taken reliable operation, versatility, and ease of installation to a whole new level.

It offers a variety of push/pull designs to fit most applications: The 6000 Series is a standard push/pull featuring a spring latch.

The 6600 Series is a push/pull with a mortise lock that is available in a variety of functions.

The 6700 Series Push/Pull Trim is designed to convert other manufacturers' mortise lock with knob hardware to push/pull trim with no additional door prep! Currently the 6700 will convert most functions of: Arrow, Best, Falcon, Marks, Schlage, Yale, Corbin/Russwin, Sargent and PDQ mortise locks to push/pull trim.

The "H" Series push/pull offers an extended hip paddle. The H series allows hands free access with a simple hip bump.

### FEATURES:

Common features of ABH

# Push/Pull Hardware

by Architectural Builders Hardware Mfg., Inc.



push/pull trim is that it is non-handed. In most cases the push/pull handles can also be mounted either up, down, right handed or left handed. And the handle on either side can be mounted in any direction. They do not have to match one another to operate.

The 6000 series is available with 2-3/4", 5" or 7" backset latches and comes with a standard or ASA strike. The 6600 series has a number of functions such as: passage, privacy, classroom, storeroom, dormitory-exit, entrance and hotel to name a few. The 6000 and 6600 series latches are UL listed; the 6700 series is UL classified for all fire doors and meets ADA requirements. All are available in BHMA finishes.

### CONSTRUCTION:

The construction of all the ABH push/pull trim is excellent. There are very few moving parts, with an internal spring about the only thing I could see that may break. If it does it is easily replaceable. The push/pull handles themselves can be broken, but will undertake a fair amount of abuse before that will occur. Overall, the product is designed to last. Units have endured ABH's own internal testing of approximately 1,000,000 cycles without failure.

### INSTALLATION:

All models are superb, but in my opinion the shining star is the 6700 series. The simplicity of converting a standard mortise lock with knob hardware to a 6700 push/pull has to be seen to be believed. All one has to do

is remove the existing knob and rose trim. Once removed install a surface mounted adapter plate supplied with the 6700 push/pull. The adapter plate is installed with two through-bolts through the existing trim holes in the standard mortise lock. This means no holes need to be drilled. Simply mount the adapter plate then attach the handle assemblies to the adapter plate with four screws. Once again, no holes need to be drilled.

The time needed to convert a mortise lock to push/pull trim is about 10 minutes. It is quick, easy and requires little more than a screwdriver. The design engineering of this product deserves an award. There was nothing left to chance. Every base was covered and it is wonderful to work with a conversion product that actually works the way it is supposed to.

### CONCLUSION:

If you have a need for push/pull trim, Architectural Builders Hardware is the place to go. If you have never heard of ABH, I recommend contacting them for a catalog of information. This is a company to watch, for they are currently working on a couple of new products that are sure to make a big splash in the hardware industry.

For more information on ABH contact: Architectural Builders Hardware Mfg., Inc., 500 Crossen Ave., Elk Grove Village, IL 60007-5015, Phone: (847) 437-9901, Fax: 800-923-9224, Web: [www.abhmfg.com](http://www.abhmfg.com)

### IN SUMMARY:

**DESCRIPTION:** Architectural Builders Hardware manufactures push/pull trim for just about any application.

**COMMENTS:** The 6700 Series is designed to convert other manufacturers' mortise lock with knob trim to push/pull trim with no additional door prep!

**TEST DRIVE RESULTS:** An excellent product. If you have a need for push/pull hardware, Architectural Builders Hardware is the place to go.